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ABSTRACT

The guide describes a summer inservice program designed to help professionals involved with autistic or autistic-like students. The first section describes the training approach, and the Special Study Institute, which included a camp experience for children with autism. (Sample agendas for the 2 week sessions are included.) Planning and preparation considerations for the camp program and for the related staff training are detailed, and three factors are emphasized: safety, independence, and fun. Actual experiences of two summer sessions are reviewed. The second section provides more theoretical and educational information. Issues in assessment, treatment, program organization, appropriateness of service, and curriculum and method are explored. An in-depth look at assessment for autistic students notes the impact of typical characteristics on the assessment process and proposes a two-phase assessment approach. (Test summaries are included.) Social skills are the topic of a chapter that presents four case studies. The assumptions and applications of the behavioral approach with autistic children are described. Design and implementation of an individualized curriculum are examined, with emphasis on assessment of cognitive abilities, chronological age, socialization, communication, and behavior. New perspectives on the centrality of communication skills and on approaches to promote those skills are presented. A final chapter traces the experiences of parents from the initial diagnosis to the child's adolescence and suggests eight responsibilities for professionals in their relationships to parents of autistic children and youth. (CL)

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AUTISM: PROGRAMMATIC CONSIDERATIONS

CARL R. SMITH
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J. JOSEPH FREILINGER

Iowa Monograph

STATE DEPARTMENT OF PUBLIC INSTRUCTION

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Iowa Study: Preliminary Report: Reintegration of Emotionally Disabled Pupils, Carl R. Smith, Maureen White and Reese Peterson, 1979.

Strategies for Planning and Facilitating the Reintegration of Students with Behavioral Disorders, Maureen White, 1980.

On Reading and Writing, Clay Starlin, 1982.

Current Issues in Behavioral Disorders - 1982, Carl R. Smith and Barbara J. Wilcots, 1982.

Autism: Programmatic Considerations, Carl R. Smith, Jeffrey P. Grimes, and J. Joseph Freilinger, 1982.

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This document is the result of the combined cooperative efforts of many people. As co-editors, we particularly thank all who had a helping hand in the two summer programs.

First, we thank the pupils who attended the training and the camp. They provided us with a meaningful learning experience. We also thank the participants in training, the teachers, consultants, school psychologists and speech and language clinicians. You made a valuable contribution while living this learning activity.

We believe that we were able to attract the best instructors possible for the scope of the activity we envisaged. These folks not only met our expectations but exceeded them. The evaluations were most laudatory.

Many of the authors of this Monograph were also instructors at one or both summer programs. We extend gratitude to them for both roles. For the authors who were not involved in the instruction, you have been with us before and know our needs and expectations. You have once again aided us. To all authors, thanks for excellent and skilled writing of material that reflects a high degree of expertise.

Without the helpful cooperation of many people from several different agencies, these two summer programs would never have seen the light of day. Government agencies and organizations are frequently viewed as narrowed minded bureaucracies. These two summer learning, training and recreation experiences are examples of what can happen in a spirit of cooperation and service. Thanks to all of the folks who worked so cooperatively with us.

The Publications Section of this Department provided much needed help in designing the cover and providing technical assistance. Thanks.

We are especially pleased and thankful to Sandra Hochstadt for development, editing and providing camera ready copy of this Monograph. Sandra, we thank you and we are sure that all readers appreciate your care and skill in producing this publication.

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Carl, Jeff and Joe

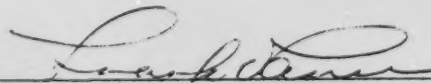
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PREFACE

In two weeks during the summer of 1980 and 1981, Iowa experienced a unique and innovative program of inservice education for professional staff who would provide educational experiences and training to children and youth with autistic or autistic-like behaviors.

The purpose of this Monograph is to disseminate how our training took place. Part I of the Monograph presents two chapters which focus on the planning for the training experience. Obviously, a project of this scope demanded the cooperative efforts of many individuals and agencies. Part II is a means of reflecting on the didactic content of the project. What was gained in a classroom was then applied in practice with the children and youth attending the camp. These seven chapters provide an overview of the teaching provided to the trainees.

We believe that this project was most successful and could be equally effective in other States.



J. Frank Vance
Director of Special Education
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AUTISM:

A STATE-WIDE TRAINING EXPERIENCE

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Jeff Grimes
Carl R. Smith

INTRODUCTION

Prior to 1974, programming for autistic and autistic-like pupils in Iowa was inconsistent. Not all pupils were served. A change in Chapter 281, Code of Iowa, in 1974 required programs and services for all "children handicapped in obtaining an education." The Iowa law preceded Public Law 94-142, but the state and federal laws were quite comparable.

Rules to implement Chapter 281, Code of Iowa, did not specifically use the term "autism." This did not mean, however, that such children and adolescents were not a part of the population referred to as requiring special education programs and services. The special education structure in Iowa considered autism, for most purposes, as a part of the area of emotional disabilities, although there are obviously characteristics manifested by these students which are shared by other handicapping conditions such as severe and profoundly handicapped, mental disabilities or communication disabilities. The instructional needs of these pupils, as determined by the diagnostic-educational team, may be appropriately met in any of several different service delivery models. In fact, according to the Iowa Autism Status Report (1979), pupils with autism were being served in several programming options. These included programs for emotional disabilities, severe and profoundly handicapped, mental disabilities and services for the communicatively handicapped. Such programming diversity may be appropriate when one considers the diverse skill levels found among autistic children and young adults.

PHILOSOPHY

It is the philosophy of the Iowa State Department of Public Instruction (DPI) that pupils with autism who are handicapped in obtaining an education are entitled to a free appropriate public education between birth and 21 years of age. The program need not extend to age 21 if the pupil completes the program sooner. Further, the diagnostic-educational team should recommend an appropriate program (instructional and support) based not on what is available, but rather, by what the pupil needs.

In Iowa, there are several special education programs which have been established specifically for children identified as autistic. Such an alternative is encouraged by the DPI when the needs and geographic clustering of such pupils warrant such an alternative.

In addition to the instructional staff serving programs for pupils with autism, there is a need for a variety of support services. A concentrated program of clinical speech and language services is usually indicated. Communication skills have been shown to be closely related to the positive long-term prognosis for pupils with autism. In the assessment area, school psychological services should be directed toward assessment and assistance in identifying such pupils using appropriate instruments. Families having children with autism often need assistance in integrating into the home a program consistent with what is being done at school and information regarding the utilization of other community services. School social workers have a role to play in this area. For some autistic pupils, there is a need for other support services such as occupational therapy. An analysis of the need for support services, as for the instructional program, is to be recommended by the diagnostic-educational team, verified by the Area Education Agency (AEA) Director of Special Education and should be used in developing a pupil's individualized education program.

Other issues need to be discussed in relation to special education programming for pupils with autism. These are issues of interaction of such students with normal age-peers, the role of residential institutions for such students, the role of clinical diagnosis and the role of school personnel in advocating for these pupils.

The need for specific educational programming for pupils with autism does not preclude consideration of the need for these pupils to have an opportunity to interact with normal age-peers. One of the primary goals in programming for pupils with autism is to assist them in attaining socially appropriate behaviors similar to chronological age peers who are not autistic. Failure to provide this interaction precludes establishing a situation where modeling behavior can take place.

In the past, the vast majority of autistic children and young adults resided in 24-hour custodial settings. In some instances, this was the only alternative offered to parents. Although institutional placement is one alternative, it is also imperative to develop alternative educational placements which would be available in our public schools.

Traditionally, the term "autism" has been used to describe a child by a physician with the assistance of clinic staff: a medical classification. In contrast, a youngster is identified for special education programs and services by a diagnostic-educational team. This team is composed of regular and special educators, special education support personnel, administrators and parents. The team may seek input from such sources as a physician, other diagnostic centers and other private practitioners. However, it is the responsibility of the team to make appropriate educational recommendations to the AEA Director of Special Education.

In the past, many pupils most accurately described as "autistic" have not necessarily received an appropriate special education program in Iowa. That may have happened for a variety of reasons: a lack of information regarding the needs of these pupils; placing youngsters in available programs rather than the needs of pupils; or, not knowing what to do with such a complex youngster.

INSERVICE EDUCATION PROPOSAL

The Division of Special Education, DPI, recognized the need for inservice training of personnel who would serve this population. An Autism Planning Committee was initiated by the Division of Special Education, DPI, in 1977. A 1979 Iowa Autism Status Report clearly delineated the problems facing educators in appropriately meeting the educational needs of pupils with autism. Some of these problems were:

1. the variable quality of screening and identification procedures used to identify such pupils;
2. the availability of regionally-based instructional programs and support services specifically designed to meet any unique needs of autistic pupils;
3. the relative absence of instructional and support personnel specifically trained to meet the unique needs of autistic pupils;
4. the varying placement of such pupils; and
5. corresponding variance regarding the level of satisfaction with current placement as expressed by AEA Directors of Special Education.

In order to address these problems, the Division of Special Education, DPI, in September, 1979, prepared a Special Study Institute (SSI) proposal as part of the DPI's application for Handicapped Personnel Preparation funds (P.L. 91-230, Part VI, D). The DPI application was for a three-year period: June 1, 1980, through May 30, 1983. An inservice training program was proposed for each of the three years.

The competitive application was funded by the Personnel Preparation Branch, Office of Special Education, U.S. Department of Education. In 1980 a 15-day inservice training program was conducted and in 1981 a 12-day inservice training program was held. (The 1982 inservice training program was not held in that the continuation grant proposal's funding was reduced 48.5 percent.)

The primary goals of the inservice proposal were to train AEA teams in the areas of classroom management techniques, language development and cognitive behavioral measurement. We believed that this would have a significant impact on meeting the educational needs of this population from a multidisciplinary approach. The tactic was to train AEA teams consisting of teachers, consultants, school psychologists and speech and language clinicians. Training materials developed during the SSI's were made available to the AEA's and to college and university training programs. This publication has been prepared and distributed in Iowa to meet the dissemination component of the first year and is being nationally disseminated to meet the dissemination component of the second year.

The principle objective of this SSI was to:

provide intensive training to multidisciplinary teams composed of program consultants, classroom teachers, school psychologists and speech and language clinicians from each of Iowa's 15 intermediate educational agencies (AEAs). This training was directed at meeting the educational needs of autistic children and young adults.

Following were the subordinate objectives:

1. The Autism Planning Committee will participate in providing input into the composition of the three weeks of intensive training.
2. Training will include both didactic instruction and practicum experience with autistic pupils.
3. Composition of training will also be determined on the basis of needs assessment data gathered from potential participants.
4. Training will include components directed at specific professional roles (teacher, consultant, school psychologist and speech and language clinician) and components dealing with multidisciplinary functioning and common elements.

The SSI was modified in the second year to accommodate recommendations and evaluations by staff and trainees of the first SSI.

PARENTAL AND LEGISLATURE CONCERN

Parents of pupils with autism had expressed concern about programming for their children for some time. In addition to the individual reports of concern, the Iowa Chapter of the National Society for Autistic Children (ISAC) was also expressing concern.

A proposed law was introduced in the Iowa House of Representatives which would have specifically required the DPI to promulgate rules for identifying and weighting (the funding formula system) autistic children and to develop programs for them. House File 160 was passed on February 18, 1980; however, the Senate did not act on H.F. 160. Instead, a joint Senate and House resolution was passed by the Senate on April 11, 1980, and by the House on April 26, 1980. This action resolved:

1. that the local education agencies (LEA) and AEA's mobilize their resources to ensure that all autistic and autistic-like children have been properly identified;
2. that the DPI, with the cooperation of LEA's and AEA's, implement a procedure to determine the specialized educational needs of this population;
3. that the DPI promulgate additional administrative rules as necessary to provide appropriate educational programs and services for these children;

4. that the AEA's and LEA's in cooperation with the DPI implement the necessary educational programs and services to appropriately meet the needs of these children; and
5. that the State Board of Regents revise preservice preparation programs as necessary to include coursework emphasis adequate to prepare sufficient special education personnel to meet the educational needs of autistic and autistic-like children in Iowa.

SPECIAL STUDY INSTITUTE PLANNING

Even before DPI had received official notification that the request for funds under Handicapped Personnel Preparation had been approved, essential planning began. In order to provide the extent of training and experiences envisioned, a great deal of cooperative and coordinated activities had to commence. A myriad of details had to be addressed, solutions found and actions taken. This chapter will not address all details (such as parking permits; list of convenient restaurants for trainees; obtaining supplies; room assignments; transportation, lodging and meals for instructors; payment procedures and reimbursements; and the list goes on and on). Several agencies were involved not only in the planning, but also in carrying out the training program. These agencies included the Division of Special Education, DPI; ISAC; Division of Developmental Disabilities; Camp Sunnyside (an Easter Seal Society Camping facility for the handicapped); Buena Vista College; Drake University; and, the Saydel Community School District.

The Division of Special Education, DPI, was responsible for the overall coordination of the project, but particularly, the instruction and practicum aspects.

The ISAC was responsible for obtaining a camp reservation to coincide with the training and recruiting pupils with autism to attend the summer camp.

The Division of Developmental Disabilities provided financial assistance.

Camp Sunnyside leased the lodging, meals, facilities and equipment for the campers.

Students from Buena Vista College (Storm Lake, Iowa) received college credit to assist as camp counselors and received a small salary to cover living expenses.

Drake University provided some rooms for the instruction of trainees and provided, via contract, dormitory and cafeteria services for the trainees.

The Saydel Community School District contracted for rooms at Woodside Middle School for the instruction of trainees, classrooms for the children in the instructional program and busing service to and from Camp Sunnyside.

The Division of Special Education, DPI, held a series of planning meetings with the other agencies and the individuals who would be responsible for carrying out the instruction. During the first summer, two individuals were employed to coordinate the overall operation of the SSI. In 1981, three individuals were employed to coordinate the overall instruction of the SSI: all three had participated in the 1980 training (a consultant, a school psychologist and a speech and language clinician). Contracts were let for instructors in disability specific content areas as well as in generic areas. Arrangements for rooms to carry out the didactic portions of the training were also the responsibility of the Division. Facilities used included meeting rooms in the Wallace State Office Building and classrooms at Drake University and Saydel Woodside Middle School. Arranging for audio-visual support was also the responsibility of the Division. This included 16mm projectors, video taping equipment, monitors and playback equipment in various sizes and formats. Coordination with AEA's and LEA's in obtaining pupil records, including IEP's, for use of the trainees also fell to the Division.

The Division also worked with Buena Vista College to obtain students to serve as camp counselors during the two weeks the pupils with autism would be at the camp. In a contract with Drake University, dormitory rooms were made available to the trainees. In addition, breakfast and dinner were provided in the student cafeteria. The trainees obtained lunch on their own in that we were not near the Drake campus at the noon hour.

The contract with the Saydel Community School District, in addition to classroom space, included janitorial services and bus transportation for the youngsters from Camp Sunnyside to Woodside Middle School and return.

Funding for the DPI portion of the camp and training program came from EHA, Part D (Handicapped Personnel Preparation) and supplementary funds from EHA, Part B. Thus, funds available to the DPI paid the honoraria, travel, lodging and meals of instructors; expenses and salary of coordinators; supplies; contract with Saydel Community School District; traineeships for participants; and partial support of the coordinators and counselors at Camp Sunnyside.

ISAC was the primary contact with parents of pupils with autism, the Division of Developmental Disabilities and Camp Sunnyside. ISAC announced the training program and camp to the parents and invited applications for campers. To meet the needs of training, we wanted a spread of ages, functioning levels and verbal and non-verbal classifications. To insure validity of training, the diagnostic status of each camp application was verified by the AEA and LEA to insure that the pupil was considered autistic or autistic-like by the educational agency. ISAC also provided parents with training and camp information, lists of clothing and personal items to have at camp and arrival and departure times.

The ISAC obtained a grant of money from the Division of Developmental Disabilities from its respite care fund. These monies were used to pay a representative proportion of Camp Sunnyside expenses such as counselors, cook, kitchen help, nurse, food service manager, maintenance, camp director, food, insurance, laundry and facility usage.

In addition, from other funds available to ISAC, that Society paid for the expenses of announcements and applications; liability insurance (for the Society, DPI, Camp Sunnyside, Developmental Disabilities, the campers, the staff and the trainees); and a share of the costs of the cook, kitchen help, nurse, food service manager and maintenance.

The total cost of the two-week camp experience was \$10,500 for 20 campers paid with funds from DPI, ISAC and Developmental Disabilities. It should be noted that parents paid a minimal "campership" fee which was administered by ISAC to help underwrite camp expenses.

Arrangements were also made with Drake University to provide graduate credit for those trainees who enrolled for such credit with the University. Other colleges and universities offered graduate credit for persons who individually made arrangements with a particular college or university. Also, the school psychologists and speech and language clinicians were offered continuing education units (CEU's) if they chose.

THE SSI SUMMER 1980 AND 1981

In discussing the training and camp program, we will present what appears to be the program of each year but, rather, the reader should recognize that this description is really an amalgam of the programs offered each year. Some basic tenets common to both years are discussed at first and then more specifics of training and camping are presented.

From the beginning it was a "given" that the entire project must be one of a cooperative venture between all agencies and among all persons. The three Division of Special Education, DPI, project managers attempted to set the model. The fact that each respected the others' disability and service expertise, the others' intellectual integrity, and the others' commitment to provide the best training experience, helped. The fact that we are friends also helped. At times during the planning and during the course of the training those from other agencies may have questioned that friendship: that's how we work. Express one's view, listen to argument, debate, argue, resolve, move on and maintain the respect and friendship which has come from working together for several years. We mention this because it is our firm belief that in order to have an effective program such as we presented, all must work together in a cooperative manner. Poor working relationships might very well compromise what might otherwise be a very successful venture.

We, and the other planners, accepted from the very beginning that the training would necessarily have two facets: (1) disability and service specific content knowledge, and (2) integration of that content knowledge into a team approach. It is far easier to set that kind of philosophical goal than it is to bring it to fruition. Based upon our 1980 experience, in 1981 we provided disability and service specific content knowledge and added overviews of that information to the other trainees. In that way, each had a better idea of what the other person was doing and "where they were coming from." By establishing a team (teacher, consultant, school psychologist and speech and language clinician) for each classroom of pupils, and with each member of the team knowing what the other was doing, the team concept ultimately evolved.

In fact, after each summer experience one could readily detect the camaraderie which had developed among the trainees.

A most important consideration was to develop an understanding of the training and camp experience as a total program. The training aspect included didactic instruction for trainees (classroom teachers, consultants, school psychologists and speech and language clinicians). In addition, the trainees had an opportunity to apply what had been presented in a practicum experience. We also considered that an important aspect of the practicum was to provide meaningful instruction to the pupils with autism. Further, practicum included not only academic instruction at the school, but also daily living skills and recreation and leisure education at the camp. At the camp, after the practicum had ended for the day, the youngsters had the opportunity to participate in a variety of camping experiences just for the sheer enjoyment of being at a camp without being subject to a highly structured or regimented program. Thus, the project offered training, teaching and enjoyment. One cannot measure the value of the shared experiences each trainee received.

In presenting a summer project like this which could then be implemented in local areas during the academic year, two ethical questions arose: the use of aversives and publicity. It was decided that the use of aversives would be discussed in the didactic part of the training, but the use of aversives would not be used in any part of the teaching or camp experiences. We also recognized that publicity of the project by the mass media could be helpful in establishing local programs. On the other hand, however, we wished to protect the right of privacy not only of the youngsters and their families, but also of the trainees. To resolve this dilemma, each camper (the parents) and each trainee was asked to sign a formal release to allow pictures to be taken and television film shot. Anyone could decline to sign the release. As a result of this precaution, we did receive a statewide news story with pictures in a Sunday edition of a newspaper and television coverage on news shows and short specials--and those wishing privacy were protected accordingly.

Who were the campers? In 1980 we enrolled 30 youngsters and in 1981 (a reduced program) we enrolled 20 youngsters. In 1980 this represented 21 males and nine females in which 23 were verbal and seven were non-verbal. Twelve of our 15 AEA's were represented by campers. In terms of age, there were eleven youngsters between 5 and 8 years of age, ten between 9 and 12 years of age, eight between 13 and 18 years of age, and one age 19. In terms of functioning level nine youngsters were considered high functioning, twelve moderate functioning, and nine low functioning. Thus, this age spread and functioning level offered an excellent opportunity to observe and work with a wide variety of problems.

In two years, 79 teachers, teacher aides, consultants, school psychologists and speech and language clinicians were trained. We also extended an invitation to each college and university to send representatives to participate in or observe the summer programming. We were not overwhelmed by representatives.

The training program can be summarized to give the reader an overview of the organization of training. In the 1980 project, the first week

(five days) consisted of intensive (five and one half hour days) of disability and service specific content instruction. In the 1981 project, only two days were available for such didactic training. For both projects when the youngsters were available (ten instructional days) the general daily schedule was:

At Woodside Middle School

8:00 - 9:00 a.m.	Planning day's educational program
9:00 - 11:30 a.m.	Class instruction and services
11:30 - 12:00 noon	Planning for afternoon program

At Camp Sunnyside

1:00 - 2:00 p.m.	Daily living skills
2:00 - 3:00 p.m.	Recreation and leisure education
3:00 - 4:30 p.m.	Camp activities (gross motor, crafts, music, social)
4:30 - 5:15 p.m.	Planning (trainees and camp counselors)

NOTE: Typically, on Mondays and Wednesdays, the teachers and consultants were responsible for the activities at Camp Sunnyside. On Tuesdays and Thursdays, the school psychologists and speech and language clinicians were responsible for the activities at Camp Sunnyside. On those afternoons a group was not at Camp Sunnyside, instruction was held at Woodside Middle School. Activities from 4:30 p.m. until 8:00 a.m. the following day were the responsibility of the Camp Sunnyside staff. Also, activities from Friday at 4:30 p.m. until 8:00 a.m. the following Monday were the responsibility of the Camp Sunnyside staff.

A training schedule from the 1981 summer project is found in the Appendix of this paper for those who wish more detail in the training program.

UNANTICIPATED PROBLEMS

Murphy's law seemed to hold true on many occasions. No matter what the degree of planning, something new was bound to happen each day. The following list is far from complete, but it will give the reader an idea of what can go awry at the worst possible moment.

1. malfunctioning audio-visual equipment;
2. a tornado warning on a weekend (20 pupils with autism and a limited weekend staff in a dark, underground shelter);
3. children who had never been away from home before;
4. children who had never slept in a double-deck bunk bed;
5. securing sufficient instructional materials to be used in the simulated classroom;
6. materials that are ordered but do not arrive on time; and
7. differing expectations of both camp and school staff.

EVALUATION

As of August, 1979, in Iowa, 163 pupils had been identified as autistic or autistic-like. That was far short of the approximately 450 such pupils one might expect on the basis of an incidence rate of five autistic pupils per 10,000 youngsters suggested by the National Society for Autistic Children. In 1980, in Iowa, 181 pupils had been identified as autistic or autistic-like. The most recent figures available for 1981 indicate that 201 pupils have been identified as autistic or autistic-like in Iowa.

During each summer project, formal and informal evaluations were a part of the training. Each day of the training the trainees were given the opportunity to critique that day's activities. Based upon that input, the training coordinators were able to modify, to a degree, the activities and content for the next day and, when appropriate, for the duration of the training and camping program.

Each instructor was rated on a Standardized Evaluation Opinionnaire-- a form used by the Division of Special Education, DPI, for all inservice training. The trainees are asked to evaluate organization, objectives, presenters, ideas, activities and content and give an overall rating. The majority of trainees rated these items as "3" or "4" where "4" is the highest rating. The second part of this evaluation asks for an evaluation of one's overall participation in the training receptivity to the ideas presented. On a scale from "strongly agree" to "strongly disagree," a vast majority indicated "strongly agree" or "moderately agree." The third part of this evaluation asked trainees to compare this inservice to others in which they had participated and indicate strengths or weaknesses, if any. Over 90 percent compared this inservice as "superior" or "above average" on a five-point scale, "superior" being highest. As might be expected, we received many comments about the strengths and weaknesses of the inservice. Perhaps an evaluation of the inservice can be made based upon the T-shirts the trainees designed, "I survived three weeks of DPI Inservice."

REFERENCES

Chapter 281, Education of Children Requiring Special Education, Code of Iowa, 1981.

House File 160, 68th General Assembly, Second Session, Iowa, 1980.

Iowa Autism Status Report. Des Moines, Iowa: Iowa State Department of Public Instruction, 1979.

Public Law 91-230, Title VI, Part D, Education of the Handicapped Act, 20 U.S.C., Chapter 33, Section 1432, 1978.

Public Law 94-142, Education of the Handicapped Act, 20 U.S.C., Chapter 33, Sections 1401-1461, 1978.

Senate Concurrent Resolution 126, 68th General Assembly, Second Session, Iowa, 1980.

APPENDIX

TRAINING OF PROFESSIONALS WORKING WITH AUTISTIC CHILDREN AND YOUNG ADULTS: OPENING SESSIONS

Overview: Saturday, June 13, 1981, and Sunday, June 14, 1981, will be sessions conducted for trainees and camp personnel prior to the arrival of the campers. The purpose of these sessions is to provide trainees and camp staff with introductory information on autism and to allow preparation for the following two weeks.

Agenda

Saturday, June 13, 1981

8:00-10:00 a.m. - Check in for those persons staying at Morehouse Residence Hall at Drake University. This dormitory is located at 28th and University (see enclosed map for location).

10:15-10:30 a.m. - Registration for training and for Drake University credit. This will take place at Hubbard Lodge at Camp Sunnyside (see enclosed map). The remainder of Saturday's sessions will take place at Camp Sunnyside.

10:30-12:00 noon - Autism: An Overview. This session will be led by Ms. Nicki Raaz, representing the Iowa Society for Autistic Children, and Carl Smith, representing the DPI-Division of Special Education. The summer training institute and camp concept will be explained. A video-tape overview of autism will also be presented.

12:00-1:30 p.m. - Lunch.

1:30-4:30 p.m. - Teaching Communication to Persons with Autism. This session, presented by Dr. James McLean and Dr. Lee Snyder-McLean from The Bureau of Child Research of the University of Kansas will be an overview of strategies for developing communication skills with autistic populations.

Sunday, June 14, 1981

9:00-11:30 a.m. - Concurrent sessions will be held at Memorial Hall at Drake University (see Drake map).

Room 107 - (Speech Clinicians) A more in-depth presentation of teaching communication will be conducted by Dr. Jim McLean and Dr. Lee Snyder-McLean.

Room 103 - (School Psychologists, Teachers) A presentation will be made on behavior management techniques specific to autistic populations. Included will be: positive methods, use of high level reinforcers, establishing instructional control, choosing interventions and a discussion of reasons why punishment techniques will not be

used and problems with procedures such as time-out for this population. Dr. Richard Simpson from the University of Kansas will present this session.

11:30-1:00 p.m. - Lunch.

1:00-3:00 p.m. - (Speech Clinicians) A continuation of the morning session. At 3:30 p.m. speech clinicians will join the other trainees at Woodside Middle School.

1:00-4:00 p.m. - (School Psychologists, Teachers) Will have an organizational meeting at Woodside Middle School. This will include reviewing student files and teaching materials and setting up classrooms.

Information will be available for those desiring to attend church services early Sunday morning and/or Sunday evening.

TRAINING OF PROFESSIONALS WORKING WITH AUTISTIC CHILDREN AND
YOUNG ADULTS

Agenda

Monday, June 15, 1981

8:30-11:30 General Session (All participants) - Woodside School

Beth Dorsey, coordinator of the autism program at Child Psychiatry of the University of Iowa, will discuss the area of assessment (why assess, tools to include in an assessment battery and standardized instrument).

11:30-12:00 Planning

1:00- 4:00 Camp Sunnyside (Speech Clinicians and School Psychologists)

1:00- 4:00 Woodside School (Teachers)

Beth Dorsey will present learning techniques and strategies common to all students with autism. She will spend some time in a discussion of techniques specific to the pre-school age group.

4:30- 5:15 All participants will meet at Camp Sunnyside with the camp staff.

Tuesday, June 16, 1981

8:00-12:00 All participants will participate in the class programs at Woodside School

1:00- 5:15 Camp Sunnyside (Teachers)

1:00- 4:30 Woodside School (Speech Clinicians and School Psychologists)

Sessions will be led by Katie Kilpatrick and Gary Ross-Reynolds

4:30- 5:15 Planning time for speech clinicians and school psychologists

7:00- 9:00 Evening Session - Drake University, Memorial Hall, 107

Beth Dorsey will explain the CARS, a behavioral observation system specifically designed for autistic populations by the TEACH project. She will also suggest recreation and leisure activities which can be done in the classroom and at the camp site.

Wednesday, June 17, 1981

- 8:00-12:00 All participants will participate in the class programs at Woodside School
- 1:00- 5:15 Camp Sunnyside (Speech Clinicians and School Psychologists)
- 1:00- 4:30 Woodside School (Teachers)
- Beth Dorsey will discuss teaching activities and strategies specific to elementary and secondary age students.

Thursday, June 18, 1981

(NOTE: This is Carl Smith's birthday. Participants are requested to demonstrate a minimal level of respect.)

- 8:00-12:00 All participants will participate in the class programs at Woodside School
- 1:00- 5:15 Camp Sunnyside (Teachers)
- 1:00- 4:30 Woodside School (Speech Clinicians and School Psychologists)
- Sessions will be led by Katie Kilpatrick and Gary Ross-Reynolds
- 7:00- 9:30 Evening Session - Drake University, Memorial Hall, 301
- A video-tape of Dr. Ken Moses discussing "The Mourning Theory and Family Dynamics" will be presented. This video-tape deals with the stages of feelings which parents of handicapped children go through in acceptance of a child's handicap--denial, guilt, depression, anger, bargaining, and coping. Nicki Raaz will lead a discussion.

Friday, June 19, 1981

- 8:00- 9:00 Organizational Breakfast at Woodside School (donuts and coffee will be provided). The purpose is to discuss the past week and receive input from the participants and explain next week's activities.
- 9:00-12:00 All participants will participate in the class programs at Woodside School
- 1:00- 5:15 All participants to Camp Sunnyside

It is suggested that those living near or in Des Moines remain at the camp until 5:15. Participants who live out of town and are planning to drive home are encouraged to discuss with staff their needs regarding time to leave.

Monday, June 22, 1981

8:00- 9:00 Planning at Woodside School

9:00-11:30 Teams 1-4

Lyle Chastain and Sheila Merzer from Minneapolis Medical Center will present on the topic "Assessment and Programming"

Teams 5-8

Instruction with students

1:30-12:00 Planning for camp and school activities

1:00- 4:00 Teams 5-8

Repeat of Chastain and Merzer presentation - Woodside School

1:00- 5:15 Teams 1-4

Camp Sunnyside

Tuesday, June 23, 1981

8:00- 9:00 Planning at Woodside School

9:00-11:30 Teams 5-8

Lyle Chastain and Sheila Merzer will present on "Teaching Social Skills."

Teams 1-4

Instruction with students

11:30-12:00 Planning for camp and school activities

1:00- 4:00 Teams 1-4

Repeat of Chastain and Merzer presentation - Woodside School

1:00- 5:15 Teams 5-8

Camp Sunnyside

7:00- 9:00 Evening Session - Drake University, Memorial Hall, 107

Film "Harry" and video-tape presentation by Bruce Balow.
Discussion to follow.

Wednesday, June 24, 1981

8:00-12:00 Woodside School
Teams 1-4: Team planning, observation
Teams 5-8: Instruction with students
1:00- 5:15 Teams 1-4: Camp Sunnyside
Teams 5-8: Team Planning

Thursday, June 25, 1981

8:00- 9:00 Planning at Woodside School
9:00-12:00 Teams 1-4
Instruction with students
Teams 5-8
Steve Maurer, Iowa Department of Public Instruction, will
present on curriculum and meeting the long-range needs of
severely handicapped persons.
1:00- 5:15 Teams 5-8
Camp Sunnyside
Teams 1-4
Repeat of Maurer presentation
7:30-??:?? Party--plans to be announced

Friday, June 26, 1981

8:00-12:00 All participants carry out instruction at Woodside School
1:00- ? :?? Wrap-up and evaluation

GENERAL SCHEDULE

Woodside School

8:00- 9:00	Planning	} Educational Program
9:00-11:30	Class	
11:30-12:00	Planning	

Camp Sunnyside

1:00- 2:00	Daily living skills
2:00- 3:00	Recreation/leisure education
3:00- 4:30	Camp activities (gross motor, crafts, music, social)
4:30- 5:15	Planning--Trainees/camp counselors

The Camp Experience

Nicole Raaz

Nicole Raaz currently resides in River Forest, Illinois. Ms. Raaz was primarily responsible for the Autism Summer Camp program operated in Iowa in the summers of 1980 and 1981. She was also instrumental in founding the Iowa Society for Autistic Children, serving as the first president of this organization and first editor of The Link, publication sponsored by ISAC. In the summer of 1982, Ms. Raaz received recognition from the National Society for Autistic Children for her many contributions in advocating for persons with autism.

THE CAMP EXPERIENCE

Nicole Raaz

The planning for a camp for children with autism in Iowa actually began several years before the camp was first held in the summer of 1980. Members of the Iowa Society of Autistic Children (ISAC) were aware of the need for a camp experience for the children in the state, and also the need for respite for families. The idea of developing a camp was discussed, but for several years it was little more than a dream.

Parents of children with autism wish for the same opportunities for their children as are available for non-handicapped children. Every child should have the opportunity to go to camp. Hiking in the woods, boating and swimming, singing around a camp fire, sleeping under the stars--the experience of being with nature--should not be denied any child. And yet, Iowa parents found that most camps for children with disabilities either would not accept a child with autism, or did not have staff trained to make it a positive experience for the child.

As discussion continued, parameters for the project evolved based on what would be most beneficial for the children and their families.

The camp session, if held, would be two weeks, rather than one. It takes some time for children with autism to adjust and learn to function in a new environment. During a one-week session the children would just begin to feel at home and it would be time to leave. A second week would enable them to participate more fully in the various camp activities. Staff would need sufficient time to get to know the campers and learn to interact effectively with them. Parents in Iowa, as in other states, have limited access to respite services. Several families had never been away from their child overnight. If a child could attend camp for two weeks, families would have the first week to unwind and relax, and would then have a second week to enjoy themselves. For families planning a vacation, two weeks is more desirable, and for those remaining at home to work, it would be important to have a weekend free.

The staffing of the camp was the next important consideration. Staff would have to be trained, or at least well inserviced in autism. Parents are reluctant to send their child to a camp with staff who know little about the disability. It's frightening for them to think of the child in a setting where the people caring for him do not understand his unusual behaviors, can't communicate with him and have difficulty involving him in activities. Most parents choose to keep the child at home rather than subject him to what could be a difficult, or even dangerous situation. If a camp were held, it would be staffed by people who could provide a safe, enjoyable experience for these children.

There were other considerations with regard to staffing. Many of the children would need one-to-one supervision so a high camper/staff ratio would be needed. Someone would have to be awake throughout the night to assure that the nocturnal children would be supervised. Two weeks would be a long time for a counselor to be solely responsible for a child, or more than one, with autism. Staff members would need some type of relief.

If staff were to be trained to work with the children at camp, it would be logical to train people who could use that experience later to provide services to other children with autism. Educators or social service personnel would be ideal camp staff.

In the selection of a site the major consideration was the willingness of camp personnel to work with the Society to plan for the safety of the campers and to train and provide technical assistance to staff.

The following philosophy was adopted and, in the eventual development of the project, efforts were made to be consistent with this statement. The philosophy refers to "children with autism" rather than "autistic children," as a reminder that they are children first, with the same wants and needs as other children, and that they happen to have the problem of autism. This change in focus from the disability to the child was promoted throughout the camp project.

CAMP FOR CHILDREN WITH AUTISM

Philosophy

That the child with autism should have some of the same special opportunities for a camp-type experience as does a non-handicapped child;

That the experience of managing outside of the family and in a new environment can be beneficial to the child with autism;

That the program will be beneficial in providing a two-week respite for families;

That it will serve as a mechanism for professionals to develop interactive skills to use in programming for and caring for children and young adults with autism.

DEVELOPMENT OF THE CAMP PROJECT

What had been only a dream started to become a reality in the fall of 1979 when plans for the Department of Public Instruction (DPI) Special Study Institute were announced. Planners of the two projects agreed that coordinating the camp with the training would be mutually beneficial.

ISAC members were enthusiastic about the DPI proposal for several reasons. The training would provide a unique "hands-on" learning experience for educators. Because of the rural nature of the state, many

were limited in their experience with the population. This project would allow them to be involved with a large number of children of various ages and functioning levels. The involvement of a team from each Area Education Agency (AEA) would train personnel who could serve as a resource to each child in each program in the state. Another aspect of the training proposal was very exciting to parents. To get educators out of the classroom into a less structured recreation setting would give them a different perspective on the children. From a very practical standpoint, coordination with the DPI project solved a major problem with regard to staffing. Having the children involved with the training would give the live-in counselors the necessary relief time each day, thus making a two-week session possible.

During the previous year contacts were made with several colleges and universities to promote interest in the camp as a learning experience for special education majors. No interest had been generated from these contacts. With plans now more definite, letters again were sent and phone calls made. One positive response was received from Buena Vista College in Storm Lake, Iowa. Dr. James Tewksbury, Professor of Special Education, agreed to have five of his students participate as counselors for the 1980 camp session.

The most obvious location for the camp/training project was the Des Moines area, centrally located in the state. ISAC members in visiting several camp sites had identified Camp Sunnyside, the Easter Seal Society Camp outside of Des Moines, as an ideal location for the project. Officials at Camp Sunnyside willingly agreed to work with ISAC in planning for a two-week session in June of 1980. ISAC would provide a coordinator, five counselors (the Buena Vista students) and an autism consultant. The Society would also be responsible for staff training and coordination with the DPI project. Camp Sunnyside would provide five counselors, a cabin coordinator, Hubbard Lodge and the other resources of the camp. The lodge would accommodate 30 campers and 15 staff.

The camp project was funded cooperatively by ISAC, DPI and the Iowa Developmental Disabilities Program through a respite grant to Camp Sunnyside. The total cost of the camp in 1980 was \$8,800. Due to inflation and changes made for the second year, the cost increased to \$10,500. Registration fees for campers were \$100 the first year and \$150 the second. No child was denied the camp experience due to lack of funds. Sponsorships were secured from service clubs and organizations throughout the state for each child needing financial assistance.

PLANNING AND PREPARATION

The camp component was to be child-oriented, while the purpose of the Special Study Institute was to provide training for the professionals involved. Coordination of the two components could have been a difficult process, but, for the most part, was not.

Over the years, ISAC and DPI had established a good working relationship, rather than an adversarial one. During the planning and implementation of this joint project, there was open communication and clear definition of the goals of the two components. An understanding was

reached that if the project was to be mutually beneficial, neither component could be allowed to take precedence to the detriment of the other. Underlying the process was a mutual respect for the other's purpose, and the recognition that both ISAC and DPI had as their objective a better life for children with autism in the state.

By February of 1980 the major components for the camp project were in place and detailed planning began. The project was promoted through the Iowa autism newsletter, the LINK, and by local chapters.

The 30 campers who were to attend were selected in April. It was anticipated that more than 30 would apply so criteria were established for selection of campers.

Financial need would not be a factor; sponsorships would be secured for any child needing assistance. Difficult behaviors also would not exclude a child from attending; it seemed illogical to develop a camp for children with a severe behavior disorder and then exclude a child because of behavior.

To give the trainees experience with a variety of children, a formula was developed to select a group that would be balanced, to the extent possible, male-female, verbal-nonverbal, and high, moderate and low functioning levels. Age limits were established to be 5-21, a school-age population. Efforts were made to select a group that would be representative of all ages and all parts of the state.

There were three major considerations which defined the day-to-day operation of the camp. These factors--safety, independence and fun--were the basis for structuring of the physical environment, the staff assignments and the involvement with DPI training.

The safety of the campers was foremost in all minds. There would be a degree of risk involved in bringing 30 children who have unpredictable behaviors, and who characteristically have difficulty adjusting to a new environment, to a camp setting.

Another major consideration, which was a part of the camp philosophy, was to assist each child in learning to function as independently as possible while at camp. Rather than "taking care of" a child, staff would help the child generalize previously acquired skills to the new environment.

The third consideration was fun--making the camp experience an enjoyable one for the campers. To engage the campers in a variety of new activities, to help them explore nature and to make that experience a comfortable and enjoyable one, would be a challenge to the camp staff.

Certain modifications were made to the lodge for safety reasons and to encourage independence. Hubbard Lodge is a large cabin consisting of a dining/recreation area with a fireplace, and two wings, each containing a bathroom and sleeping areas for campers and counselors. The camper sleeping areas, in accordance with state fire regulations, each have a

door for fire exit. A buzzer was installed on each door to sound an alarm if a camper went out. The buzzers were connected to ring in the lodge area so sleeping campers would not be awakened.

The camper sleeping areas have bunk beds to sleep 15. Partitions were installed to divide the large area into cubicles containing two bunk beds. This provided more privacy and reduced the visual and auditory stimuli in the room.

To help the campers learn their way around, name signs were placed on each bed, clothes box and dining chair. Pictures of the campers were added to the signs so each could identify his place.

Twelve staff lived in the cabin. The ten counselors were each responsible for three campers. The other two staff were the ISAC Project Coordinator, Nicki Raaz (a parent) and Cabin Coordinator, Mark Klingner. Since it would be difficult for these children to relate to a group of 42 people, campers and counselors were divided into five teams. A team consisted of two counselors and six campers. The team members were together for most activities. For example, they sat at the same table at meal time and walked to swimming together. The same groups were maintained for the DPI training at school and during afternoon recreational activities. Grouping in this way allowed the counselors to share responsibility for a more difficult child in the group.

Two counselors were assigned, on a rotation basis, to be awake during the night. They would sleep the following day, returning to duty at 4:00 p.m. The two coordinators who did not have campers regularly assigned to them filled in for the counselors who were sleeping during the day.

Volunteers were recruited from the Des Moines area to be involved in evening activities. They could provide one-to-one supervision when needed with certain children. The volunteers were part of a respite training project conducted by Easter Seal Society. They would provide respite care for persons with autism in the Des Moines area after participating in the camp respite training.

ISAC arranged for technical assistance from the University of Iowa Autism Program. Rita Engels and Chris Quinn from that program helped conduct training for counselors and volunteers and were involved with activities each evening. The ISAC Coordinator was also involved in staff training and offered "parental" technical assistance.

As part of the inservice for live-in staff, information was gathered about each child. A questionnaire was sent to parents requesting information on the child's mode of communication, behavior, self-care and social/recreation skills. Since some children's behavior differs at home and at school, an identical questionnaire was filled out by the child's teacher. Camp staff would not teach new skills but would try to be consistent with home and school so the child did not regress.

The two-day inservice included general information on autism, methods of communication and behavior management, and a study of the information gathered about each child. Communication was emphasized: that each child's

mode of communication may differ; that counselors must be able to understand and communicate with their campers. Knowing each child's skill level was stressed; that it would be important to give enough cues to enable the child to use his skills, yet not do too much for him. And safety was stressed: that the children are unpredictable and some may be "runners"; that counselors must know where their campers are at all times.

It was difficult to fully prepare the counselors for what would come during the two weeks. It was necessary to make them aware of potential problems in order that they could anticipate what "might" happen, but that also served to raise anxieties to a high level.

THE FIRST SESSION - 1980

On Sunday the first family arrived an hour before registration was scheduled to begin. The afternoon was somewhat chaotic, but not much more than to be expected with any 30 campers arriving, settling in and exploring a new environment. There was a lot of milling around. Some families were hesitant to leave--for some it was the first time away from the child. The counselors were anxious for parents to leave. They were dealing with a new situation, trying to remember what they had learned in training.

It was a get-together for the ISAC members. What had for so long been a dream was now fully a reality. Several, including the ISAC Coordinator who had been involved from the beginning, experienced an odd feeling of disbelief that it was really happening.

A typical day at camp began as early as the first campers awakened. Those rising before 7:00 joined the night staff around the fire which had been burning in the fireplace during the night. At 7:00, counselors arose to assist the campers in the morning routine of dressing and self-care.

Campers were encouraged to help with meals by setting the table and clearing their own dishes. Counselors assisted only as much as was needed. Since meals were served family style, each table designated a "server" for the day--a camper who would bring the serving dishes from the kitchen to the table. After breakfast the campers made their beds and brushed their teeth in preparation for school. The bus arrived at 8:45 to take them to "camp school." Counselors took turns as escorts on the bus, then had the morning free.

The campers returned at noon for lunch and a brief rest period. The DPI trainees arrived at 1:30 for the afternoon camp activities. During those activities the trainees were involved on a one-to-one basis with the campers. The counselors, who were familiar with the camp facility, were also involved in these activities.

During the afternoon the campers went boating, fishing or hiking in the woods, played group games such as volleyball, made craft projects or rode the "jollywagon."

At 4:30 the trainees left and the campers were allowed to be themselves for an hour of unstructured time, "autism time" as it became known

to the staff. After the busy day some children needed time to be alone, to listen to the record player or to wander. Activities were child-directed. Staff members were available to interact with campers; they suggested activities, but did not insist that the camper become involved. Some sat quietly together under a tree, or explored a new part of the grounds. One of the counselors exercised outside the cabin during this time and several campers joined him in this activity. It was a time for counselors and campers to simply spend time together and get to know each other.

Each evening after supper the group went swimming in the pool at the main camp. Volunteers were involved at this time. Swimming was one of the most enjoyable activities. Only a few of the campers didn't like the water; they were encouraged to try it, but not forced to go in. By the third night all had ventured into the water.

Upon returning to the cabin, the campers changed into pajamas then gathered around the fireplace to sing as one of the counselors played the guitar. A noticeable calm set in each night as the music started.

When the campers were settled into bed, counselors scheduled for night duty took over and those scheduled for their "night out" left. The others usually gathered around the fire to share the joys and frustrations of their day. Several nights persons involved in the DPI training stayed over at the cabin to experience the "night sounds." Those who chose to stay over and the staff living in the cabin developed a sensitivity for parenting of these children as a 24-hour-a-day responsibility.

The degree of interaction that developed among the campers--children whose disability involves serious problems with social relatedness--was exciting and very rewarding to the staff. Social interaction was initiated and encouraged by the staff but much developed spontaneously. It started during swimming as campers began to splash each other or push one another around on air mattresses. Relationships developed among the campers. One 12-year-old girl and 6-year-old boy developed a sister-brother type interaction; for example, she would take his hand as they walked to the pool, or he would "bug" her as she listened to the record player. A teenage girl developed a crush on one of the older boys. She followed him everywhere and tried to sit next to him whenever she could. Two of the nine-year-old girls engaged in very typical nine-year-old behavior--one sneaking out of bed to climb in with the other, giggling as if at a slumber party.

Important relationships also developed between campers and counselors. The planners had speculated on how long it would take for the campers to respond to their individual counselors and for the counselors to become comfortable with the campers and relate effectively to them. Those relationships developed very quickly, as did a possessiveness on the part of the counselors. During discussions of the day, references were to "my kids." The initial possessiveness developed into what can best be described as very "parental" feelings toward the campers. This resulted in some interesting dynamics among the various groups working with the project.

The counselors began to question advice given by the consultants who came in the evening to offer technical assistance. The feeling was that the consultants, although trained in autism, were only with "their kids" a couple of hours a day so couldn't "really know" the children as well as they. Should they take the advice of such a person, an "outsider" who was not living with the child, when it differed from their own idea of what was best?

An attitude of frustration developed related to the DPI trainees. Many of the educators involved in training had not previously worked with children with autism. Involving a child in a recreation activity is difficult, depending a lot on the ability to relate to the child and to make the activity interesting enough for the child to try. Most of the trainees were just beginning to develop these interactive skills. The counselors felt that the educators "should know" what to do since they were "professionals." (Their feelings were very similar to the frustration parents have when their child is placed in a class with a teacher who has little experience with autism.)

The counselors' attitudes toward the volunteers was more tolerant. The volunteers were not offering advice and since they were not professionals did not have to display competence. They only came in for a short period of time to help out, something like a "sitter."

It became necessary to discuss the feelings that were developing and to clearly define the roles that were being filled. It was identified that the counselors were, in fact, in "parental" roles at camp and their feelings were very natural. However, camp was also a two-way learning experience as the campers learned recreation skills and the trainees learned interactive and teaching skills. The discussion led to the recognition that while camp should be "fun," acquiring new skills is essential for children with autism if they are to participate in the world around them.

The 1980 session was considered to be a success as both a camp and training experience. For the most part, the serious problems that were anticipated didn't develop. During the two weeks there was only one incident of aggressive behavior and one serious tantrum. The several "screamers" in the group handled the new experiences well and weren't set off. The "runners" in the group didn't run and no campers were hurt or lost.

The campers had settled into the routine quickly and important relationships had developed. Each participated in activities at his own level and all seemed to be very comfortable in being with nature.

In the post-camp evaluation by counselors the greatest need identified was to individualize activities more for each camper. They felt that had they been responsible for two rather than three campers they could have helped each to participate more fully in the camp experience.

THE SECOND SESSION - 1981

The need to individualize activities was one of the considerations which led to a change in the number of campers for the 1981 session. The planners were reluctant to reduce the number, but the decision to serve 20 campers the second year was made based on several factors.

The cabin was at maximum capacity with 30 campers. Weather had been good during the first session with no need to have activities indoors or evacuate to the emergency weather shelter. Should those situations arise, they would be more manageable with 20 campers.

Staff burnout was another factor. The stress associated with living with these children became apparent the second week after the live-in staff had total responsibility for the campers from Friday afternoon until Monday morning. Burnout would be less with counselor's energies and attention divided two ways rather than three.

Changes were made, too, related to coordination with the training component. The afternoon activities were divided into three time segments. A time was scheduled for daily living skills, during which the trainees worked with the campers at the cabin on self-help skills and tasks such as washing dishes, sweeping and bed-making. A "special activities" time was also added to the afternoon. At this time one group might make home-made ice cream for the mid-afternoon snack while another washed cars for staff. A part of each afternoon was again spent in traditional camp activities.

Strategies were developed to facilitate the process of staff and trainees working together. Planning the afternoon activities became the joint responsibility of counselors and trainees. Each developed a better understanding of the other's roles during this process.

Several people returned, some in different roles the second year, which also aided the process of working together. Tracy Ammons, a counselor the first year, had graduated from Buena Vista and was teaching children with autism. He returned to participate in the DPI training. Two other live-in staff, Lori Derr and Mark Klingner, also returned, with Lori serving as cabin coordinator the second year.

Frieda Thomas, a teacher who had participated in the training, agreed to be involved as live-in consultant during the session. Her technical assistance was well received by the counselors. Since she was living in the cabin, experiencing what they were, her suggestions for "their kids" were considered valid.

The dual nature of the camp/training project was stressed during the staff inservice. Daily discussion sessions were held throughout the session for counselors to discuss the campers and also their feelings related to what they were experiencing.

The session got off to an exciting start on Sunday evening with a tornado warning. The campers had just started to settle down for the night when the call came to evacuate to the weather shelter at the main

camp. Being in the basement shelter for two hours with 100 other people was difficult, but most campers handled it well.

The atmosphere during the session was more relaxed with fewer campers, several experienced staff and improved coordination with the training component. The daily schedule was similar to the first year except for the change in format for the afternoon.

Toward the end of the first week the staff felt comfortable with varying the routine to try some new activities. A late afternoon outing was planned to a nearby park for hiking in new territory. The return trip included a stop for ice cream which, of course, was a big hit with the campers. A second outing was planned to include an evening picnic supper.

The highlight of the second session was an overnight on Saturday night. After swimming in the morning, the campers divided into groups to prepare for the sleep-out. Some peeled vegetables and made meat patties while others assembled the "foil dinners" to cook over the fire. Wood was gathered to build a fire and camping gear was carried to the camp area. The site selected was near enough to the cabin to allow campers to return to use the bathroom. (No one wanted to be responsible for encouraging the kids to use a camp-style latrine in the woods.)

There was an air of excitement during the day that continued into the evening. The campers watched with wide eyes as the brightly colored orange and green tents were assembled. The supper prepared by the campers tasted especially good and the singing around the fire was jovial. For many this was the first experience of sleeping outdoors in a tent. The counselors thought the campers might have difficulty settling down, but as the sun set and nature's night sounds increased, a sense of calm replaced the excitement.

As the second session ended, staff members were again asked to give input in preparation for the following year. New ideas will be incorporated in planning so that each session will be better than the last.

Each person participating in this project responded differently to the experience. If a generalization can be made it would not be that the experience was positive or negative, but rather that it provided an opportunity for growth.

The campers grew as they were introduced to a variety of new experiences. Staff tried to make them as comfortable as possible as they learned practical things like washing cars and peeling vegetables, and camp things like boating and fishing.

The counselors grew as they were challenged to learn to relate to some very difficult children, to be creative in their involvement with them, and to continue to be with them when stress and exhaustion had taken their toll. Few people have the opportunity to get to know these children in such a personal, "parental" way, and the counselors' responses to this challenge varied. Some became "hooked" on autism and will be involved with these children again. Others will choose not to be involved.

It was a time of growth for the educators as they learned classroom things, like assessment and functional curriculum, and as they also learned about the children as people. They met a variety of individuals who have the diagnosis of autism, got to know them outside of a classroom and were involved with them in both work and play for two weeks. This time away from the everyday world provided the opportunity to focus on the child first and possibly to gain a new understanding of the problem of autism.

Education of Autistic Children:

Philosophy and Program Options

Bruce Balow

Elizabeth Balow

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EDUCATION OF AUTISTIC CHILDREN:

PHILOSOPHY AND PROGRAM OPTIONS

Bruce Balow
Elizabeth Balow

The education of autistic children continues to be encumbered by strongly held beliefs based on limited knowledge and a narrowness of perspective. These make public education policies difficult to construct from professional knowledge and highly susceptible to the political influence of any small minority of interested advocates. Arguably, from a public policy perspective, when restrictive placements are required, it is most appropriate to educate children labeled autistic along with other severely handicapped children of similar educational characteristics and needs who may well carry labels of severe mental retardation, severe language delay or disorder, or severe behavioral disorder. The rationale for such a public policy position is based on demographic data, particularly prevalence and geographic dispersal, associated cost effectiveness information, and belief in the appropriateness of grouping children for schooling on the basis of functional need rather than diagnostic label.

The alternative position is to call for separate, segregated programs in which children labeled autistic are gathered together for schooling with other children labeled autistic. The argument here is that the diagnostic classification is of greatest importance, foretelling what the child is like, what he will be able to do and how best to attain that capability. And, even if the child's functional needs at the moment do not appear similar to those of the other children also labeled autistic, the underlying characteristics of the diagnostic category mean that in time they will be and to group him with children who have been labeled retarded is to consign him to an educational program that is certain to be less effective than it might be. More important, since by diagnostic label he is autistic, not retarded, the curriculum, the pace of instruction, and the models of behavior shown by the retarded children will significantly impair the progress of the autistic child.

We take the position here that the arguments for a separate program of education based on the autistic classification are neither logical nor based on evidence and further, that not only is the public better served, but the child is better served, when programs of schooling are based on functional needs of children rather than narrowly categorical labels.

DEFINITIONS OF SEVERELY HANDICAPPED

Concern for the education of severely handicapped persons in the United States is, in the main, a relatively recent phenomenon. In this effort, an early emphasis in definitions focused on medically oriented,

disease or illness descriptions. More recently the emphasis has shifted to behavioral descriptors and educational services needed--a far more useful approach from the perspective of educational intervention.

As this process of classification of severely handicapped children for purposes of special education has developed and become better informed and, one may argue, more functionally useful, it has become more inclusive, less narrowly categorical. In each of the three definitions to follow, children who are labeled autistic will be seen to be fully accommodated in the behavioral descriptions and implied needs.

In 1974, Abt Associates produced the following definition of severely handicapped. Six of the seven major behavior characteristics specified are found among the descriptors commonly cited as characteristic of autistic children.

Severely handicapped children and youth (are) functionally defined as those persons age 21 and under who are either mentally retarded, emotionally disturbed, deaf/blind, or multiply handicapped and who exhibit two or more of the following behaviors with a degree of regularity:

self-mutilation behaviors such as head banging, body scratching, hair pulling, etc., which may result in damage to oneself;

ritualistic behaviors such as rocking, pacing, autistic-like behavior, etc., which do not involve danger to oneself;

self-stimulation behaviors such as masturbation, stroking, patting, etc., for a total or more than one hour of a waking day;

failure to attend to even the most pronounced social stimuli, including failure to respond to invitations from peers or adults, or loss of contact with reality;

lack of self-care skills such as toilet training, self-feeding, self-dressing, and grooming, etc.;

lack of verbal communication skills;

lack of physical mobility including confinement to bed, inability to find one's way around the institution or facility, etc. (Abt Associates, 1974, p. v.)

In 1975 the Bureau of Education for the Handicapped (USOE) placed particular emphasis on the presence of extreme deficiencies in children's behavioral and developmental characteristics. Note also that, at that time, autism was considered to be one type of serious emotional disturbance. More recently the official Federal designation of autism has been changed to classify autistic children for purposes of special education and rehabilitation, as "other health impaired." That change in classification notwithstanding, the behaviors listed as indicative of severe handicap are, again, highly descriptive of autistic children. This definition describes severely handicapped children as follows:

A severely handicapped child is one who because of the intensity of physical, mental, or emotional problems, or a combination of such problems, needs educational, social, psychological, and medical services beyond those which have been offered by traditional regular and special educational programs, in order to maximize full potential or useful and meaningful participation in society and for self-fulfillment. Such children include those classified as seriously emotionally disturbed (schizophrenic and autistic), profoundly and severely mentally retarded, and those with two or more serious handicapping conditions, such as the mentally retarded deaf, and the mentally retarded blind. Such severely handicapped children may possess severe language and/or perceptual-cognitive deprivations, and evidence a number of abnormal behaviors including: failure to attend to even the most pronounced social stimuli, self-mutilation, self-stimulation, manifestation of durable and intense temper tantrums, and the absence of even the most rudimentary forms of verbal control, and may also have an extremely fragile physiological condition.

As the definitions, by the mid-1970's, had become highly oriented to behavioral characteristics, that change carried with it an implied, sometimes explicit, focus on functional needs of severely handicapped children when treatment was considered. Haring (1978), for example, identified six behavioral domains and characteristics for instructional personnel to note in individual children's patterns of performance:

1. compliance problems
2. high rates of self-stimulation
3. poor communication
4. slow response and development rates
5. poor social skills
6. poor health and physical or sensory impairment.

Haring further suggested that when taken together, the cumulative effects of the behavioral deficits cited above provide a practical definition, since the concept of severe handicaps is described in terms which are critical to the educational, habilitational and/or therapeutic treatment specialist.

RELATED ISSUES IN EDUCATING AUTISTIC CHILDREN

Since autism was originally described by Kanner in 1943, there has been considerable disagreement about which children should be labeled autistic. Early on the major difficulties were in deciding whether there is a difference between autistic children and schizophrenic children and whether autism is an early form of schizophrenia as was originally thought. More recently, the arguments focus on differences between autistic children and children with severe language disorders or with severe mental

retardation. What seems to fuel the fire of these disagreements are the various definitions' implications regarding causation and solutions to the puzzle, including hope for future growth and change; i.e., does success lie in medication, in education and if so, what kind, in family restructuring, etc. Adding to the difficulty of gaining understanding is the rarity of the disorder, generally estimated to show a prevalence of two to 4.5 in 10,000 children (Hingten & Bryson, 1974; Torrey, Hersch & McCabe, 1975).

While some researchers may emphasize the perceptual disturbances in autism (Ornitz & Ritvo, 1976) and others may stress the impairments of integration between sensory information and memory (Rimland, 1964), there is some agreement as to the major characteristics found in most autistic children. According to Rutter (1978), these are: (1) a profound and general failure to develop social relationships, which may be seen in a peculiar aloofness in the presence of people; (2) severe language retardation with impaired comprehension, and frequently nonfunctional speech often including echolalia; (3) ritualistic stereotyped behavior, or an insistence on sameness in the environment. In addition, it is widely agreed that most autistic children are functionally mentally retarded, that the onset of autism occurs within the first three years of life and that it is more a physiological problem than a problem caused by home environment or psychological trauma. Beyond these relatively surface level descriptions, about which there is by no means unanimous agreement, almost every aspect of autism remains to be discovered and understood. Meanwhile, much good work goes on, largely based on practitioners' observations of what seems to aid development and what doesn't.

ASSESSMENT

When Autism is suspected it is an accepted, unchallenged notion that strenuous efforts should be made to obtain the correct or most definitive diagnosis of the child's disorder. Often, probably in the majority of cases, the ultimate authority is sought in a medical setting. The child and his parents usually travel from home town general practice physician or pediatrician, to nearby psychologist or mental health clinic, to neuropsychiatric or child psychiatry unit in a teaching hospital. Eventually, based on numerous medical, psychiatric and psychological assessments, the "definitive" diagnosis is made; it usually includes severe mental retardation, neurological involvement, and autistic behaviors, with current functioning described in various ways to portray severe delays or disabilities in cognitive functioning, language and communication, social behavior, and self-help skills.

The etiology is usually "unknown," or neurological involvement is intimated as cause. The prognosis is couched in quite negative terms, usually, with little hope offered and few, if any, suggestions for treatment.

The position taken here is that several legitimate reasons exist for conducting detailed medical, psychological and educational/social diagnostic analyses of such children. But educators need to be clear about the reasons for each assessment and the help one may reasonably expect from each. Medical examinations produce evidence and judgments on physiological

function--are the parts in place, do they show proper responses to stimuli and if not, why not and what can be done about it through, usually, physical intervention. Psychological examination produces evidence and judgments about cognitive and emotional function--memory, problem solving, language skill, personality characteristics; are these normal for age and if not, what are the deviations and what can be done about them. The educational/social assessment commonly differs from the other assessments in two important respects. First, it generally includes observations of the child in group settings as well as individual examinations, observations which produce information vital to the practical skill oriented interventions of the educator. Second, the educational assessment is focused on functional skills; that is, matters of immediate concern in the child's existence: language and communication, self-help skills, social behaviors, academic or pre-academic skills.

Thus the educator should expect highly practical direction and suggestions from educational and psychological diagnostic studies of the child, whereas the medical examination may be expected to provide assurance that physiological disabilities or malfunctions are being dealt with. But little else of practical value to the process of educational intervention should be expected from medical study of the child.

To put it most bluntly, the educator is the professional with primary responsibility to assist autistic children with the critical developmental tasks that face the child and his parents. Fortunately, the well-prepared teacher of severely handicapped children is the professional with the most relevant knowledge and skills to fulfill that role, with, of course, the advice and counsel of psychologist, communication disorders specialist, and ancillary medical professionals. But the educator cannot duck either primary responsibility or the recognition that it is in and through carefully designed instruction that the child will make progress.

In the attempt to define autism, various assessment systems in the form of diagnostic checklists have been proposed. The British Working Party (Creak, 1965) proposed nine criteria for the diagnosis of schizophrenia in children. The two considered most indicative of autism were gross and sustained impairment of emotional relations with people and serious retardation with islets of normal or above normal skills. The nine criteria were problematic because they seemed, on the one hand, to pertain to all psychotic and severely disturbed children, not just autistic, and, on the other hand, to be too specific, including such criteria as intense panic outbursts, which were not always present in autistic children. Rimland (1964) also proposed nine major symptoms, his two primary signs of autism were autistic aloneness and an insistence on being left alone in an unchanging environment. Rutter (1969) reported on a "multiaxial" system proposed for psychiatric disorders by the World Health Organization, the axes being dimensions such as intellectual functioning, which proved too ambitious an undertaking to carry out. Under this system, five diagnostic signs of early infantile autism were proposed, similar to those previously listed.

DeMyer, Churchill, Pontius and Gilkey (1971) reviewed five assessment schemes for diagnosing autism and, while seeing areas of substantial agreement, found no more than 35 percent overlap between systems. A group

of children could be diagnosed as autistic according to one system and not according to another. To date, there is no well-established assessment tool for diagnosing autism.

While the questions of precise definition and differential diagnosis have not yet been answered, the practical reasons for assessment described early in this section are clear. That autistic children are not a homogeneous group and need to be planned for differentially hardy needs stating. One program serving a rural area in Iowa has decided to focus on two areas of assessment, intellectual functioning and language functioning, which results in placement into one of four subgroups for programming (Furlong, n.d.). The subgroups are high IQ/fluent speech, high IQ/poor speech, low IQ/fluent speech, and low IQ/poor speech. (It should be pointed out that these designations mean, for example, high IQ for this population, not for children in general.) There is evidence to suggest that IQ is a good predictor of later achievement and adaptive living skills in autistic children (Bartak and Rutter, 1976), thus, there may be good reason to include some IQ testing, using non-verbal tests if necessary, as part of initial assessment. Since language is central to the tasks of school, a functional assessment of this area, based on child observation and parent information, also seems an essential part of assessment.

While other programs may not have as explicit a model for subdividing autistic children into groups on the basis of assessment, all programs for autistic children use their own questionnaires, checklists, or observation procedures to gather information on levels of functioning and behavior. The point is that assessment, in practice, is dependent on the particular special education program or diagnostic facility available to the family. And in the final analysis, the value of that assessment, for purposes of education, is largely dependent on the extent to which it accurately describes the child's current functioning, immediate needs and instructional strategies likely to produce improvement.

TREATMENT

To be most effective, treatment programs should involve parents fully in the planning and implementation of educational activities. Progress with autistic children tends to be slow and, as all children, they benefit from a consistent approach at home and at school, thus cooperation between parents and teachers is important. In addition to parent involvement, most treatment programs attend to self-help skills (such as toileting and dressing), language training, social skills, preacademic and academic development, and reducing self-stimulation and self-abuse. The specific treatment program would, of course, depend on the behavior and skills of an individual child. Autistic children often have difficulty generalizing beyond the specific skills they are taught. They may learn how to respond to a direction such as "sit down" from a particular adult in a particular room, but not be able to respond to the same direction given by a different adult, or given in a different location. This concrete and often mechanical style of learning means that it is important for any treatment program to develop motivation to learn some spontaneity and transfer in use of skills.

The major types of treatment programs have followed various theoretical approaches. These have been psychoanalytic, exemplified by Bruno Bettelheim's Orthogenic School in Chicago, behavioral, exemplified by Lovaas (1976) and colleagues at UCLA and Kozloff (1973) in St. Louis; and psychoeducational, exemplified by Stuecher (1972) at the University of Minnesota and by Schopler's program in North Carolina (Schopler, Reichler & Lansing, 1980). Biological approaches in the form of drug therapy (Corbett, 1976) and megavitamin therapy (Rimland, Callaway & Dreyfus, 1978) have also been tried with no particular success. Representatives of these approaches are sometimes quick to criticize each other. But it does seem clear that behavioral techniques which use reinforcement and control of the environment are essential to decrease self-abuse and self-stimulation and to increase attention so that learning can occur. The advantages of psychoanalytic and psychoeducational approaches are that they stress building relationships with people, so lacking in autistic children, and concentrate on the emotional aspects of development. The psychoeducational approach also focuses on functional needs in a developmental context.

As with the topics of definition and assessment, no treatment clearly predominates as the most effective in educating autistic children, although behaviorists of narrow perspective will argue vehemently that theirs is the one true religion. The problems of definition, of course, can confuse those who wish to compare programs based on research reports, since different behavior or needs of autistic children may be helped by different treatment techniques, and typically the children are not adequately described in such reports. Increasingly, also, programs are less insistent on purist methodology; it is common now to see reasonable blends of techniques from behavioral and psychoeducational origins.

PROGRAM ORGANIZATION

Autistic children have been served all along the continuum from residential treatment centers to mainstreamed regular education classes in private as well as public schools. Bettelheim's Orthogenic School is an example of a residential school. The League Schools of Brooklyn and Boston, and the Judevine Schools in Missouri and Illinois are examples of day schools. Dunlop, Koegel and Egel (1979) and Almond, Rodgers and Krug (1979) have reported on how to gradually mainstream autistic children, either by putting them into regular classrooms with paraprofessional aides or by having regular education children come into their special classrooms. The University of Iowa has developed a combination of a six- to eight-week inpatient diagnostic period, at a center, followed by periodic checks to local school districts and parents by an outreach worker (Lowry, Quinn & Stewart, n.d.). In line with the nationwide movement toward least restrictive placement of handicapped persons, including deinstitutionalization, more children are now being educated in day schools and special classes as opposed to residential and hospital settings.

Since the incidence of autism is so low, autistic children served in public schools are often placed in classes for emotionally disturbed children or in classes for retarded children, unless, of course, there is a high enough concentration of autistic children in a metropolis to make a special class for autistic children cost effective (and assuming that

educational circumstances indicate it is the most appropriate for the children). An itinerant specialist teacher has been tried for a number of years in Vermont and more recently in other states (Deno, 1972), to assist regular teachers with diagnosis, instructional plans and materials for the full range of handicapped children in the schools. Presumably, some, if not all, children labeled autistic could be readily assisted in this manner. An Iowa program uses a "behavior design instructor" who goes to local districts, surveys available resources and helps local schools to set up interventions for the children involved. These interventions may involve the behavior design instructor as a co-teacher, as a trainer of aides, or as a coordinator and occasional supervisor.

The choice of program model is dependent on the services already available in a district, the number of autistic and other severely handicapped children in the area, and numerous other cultural, geographic and climatic, and socioeconomic factors (Helge, 1981). The model choice is also dependent on the child's severity of behavior, age and the wishes of the parents regarding whether they choose to have the child at home. There is nothing inherent in a particular model in and of itself which would make it effective or not effective. The challenge is to make creative use of the resources and circumstances available to fit the functional needs of the particular child.

PROGRAM OPTIONS

The identification and assessment of autistic children is often a confusing ordeal for parents and a complex puzzle for professionals. The assessment and diagnosis of autistic children requires the services of trained diagnosticians. Due to the rarity of this disorder, it is most likely that personnel with extensive experience with such children are only found in urban centers of population. Rural and sparsely populated areas are at a distinct disadvantage when attempting to provide educational services to autistic students. First, rural areas lack sufficient numbers of autistic children to establish cost effective programs in each community. Second, they lack properly trained, experienced staff to organize effective programs and teach in these programs. Third, the prevalence figure of 2 to 4.5 autistic children in 10,000 (which may well be an overestimate) provides reason to doubt that a separate program would make sense, even if the staffing problem could be solved.

The difficulty of providing programs for autistic students is further complicated by the heterogeneity of autistic students. The label autistic may not help one in picturing the student and his or her educational needs. Autistic students may have fluent speech or no speech at all. Behavior from one to the next may be highly variable; one student may be self-abusive, another will not; some are incessantly verbal while others are mute. Most will function as a retarded child, most will show some type of language problem and most will show problems in social behaviors, but the great differences among students who have been labeled autistic raise serious questions about the wisdom of using that label as a basis for planning and organizing their educational programs.

Once the child is identified, assessed and labeled it is not always clear which teaching methodology is most appropriate. Within the fields

of special education and psychology and among parent groups, there are often strong opposing beliefs and philosophies on the nature of the problem, appropriate curricula and instructional methods, and optimum patterns of organization for service delivery. Enlightened professionals and parents, alike, must be vitally concerned over cost/benefit issues as well.

Autism is rare, while severely handicapped children may aggregate 1 percent or so of the age group. There are no decent data for secondary school autistic children, but according to Torrey et al. (1975) the prevalence of autism is between 2 and 4.5 per 10,000 in the seven- to ten-year-old age range. The difference in number depends on how rigorously the diagnostic criteria are applied. Thus, in a rural state where the population density in each county is low, it is highly unlikely that within most counties of the state there would be more than one autistic student, whereas a number of severely handicapped children would be found. In our work in Minnesota, over the past decade, we have not been able to find anything like four children in 10,000 identified as autistic, despite efforts to search out such children. In urban and suburban areas with high concentrations of population, of course, there might be enough children to form categorical groups; but even in high population areas, were the smaller prevalence figure to be used, it would undoubtedly influence policy. However, even applying the higher ratio, if the categorical approach to service was implemented, it would be highly unlikely that students could be served in a classroom with other autistic students unless many of the students were transported long distances, or were maintained in a residential school.

As mentioned previously, autistic students are a very heterogeneous group; that is, there are many and wide differences within the group. While it may be possible that a few autistic students could be located in one area, it is nearly certain that their educational needs would differ greatly, depending on their level of skill in self-care, socialization, language and speech, and school achievement. The mere fact that several children labeled autistic live in reasonable geographic proximity does not necessarily mean that there would be an appropriate match of their educational or developmental needs. Placement of autistic children in strictly categorical programs would lead to the development of numerous scattered programs operating on a high cost basis with few children to be served and unnecessarily high costs for professional personnel. A more open program for severely handicapped children of similar functional needs would make better educational sense and be far less costly on all dimensions.

When there are sufficient numbers of students within a geographic area, regional and cooperative service delivery models are possible, but that alone does not make an aggregate site using a categorical approach the best choice. It only makes such a choice economically feasible. Segregated special classes are highly dependent on the location of the students, geographically, in relation to a central site. As the distance from that site increases, transportation time and costs may well obviate any potential benefits of a categorical grouping.

The alternative to categorical programs is a program based on the child's functional need without regard to label stereotypes. If the description of autism with which we began this document is even close to being accurate (and our reading of the professional literature, plus our own observations based on over five years of experience with autistic children, argue that it is), then the most appropriate program for a child will be one that is individually tailored for his specific needs. However, there will be a high probability that any autistic child will behave as if retarded, need much help with language and speech, need self-help and socialization skills, as well as training in preacademic and prevocational skills.

The opportunity to receive appropriate instruction in those areas can be found in many programs for retarded children or severely emotionally disturbed or behaviorally impaired children. Whether the method of service delivery is through a resource room to which handicapped children are assigned for part of the school day according to need, through an itinerant consulting teacher who visits the regular classroom to which the handicapped child is assigned for his primary placement, a generic special class, or a "homebound" program, the specialist teacher is able to effectively respond to 95 percent of the functional needs likely to arise, because all such teachers learn essentially similar skills in their professional preparation.

While many school districts, cooperatives or educational service units would not have sufficient autistic children resident in the area to establish a cost effective categorical program, most would have a large enough number of children whose functional needs are similar, no matter what the diagnostic label, to establish a generic program for severely handicapped children.

Availability of service would be greatly enhanced by generic programming. As Helge (1981) has shown, 67 percent of all schools in the United States are in rural areas and the majority of unserved or underserved handicapped children are in these areas. Among the major problems she identified, by surveying state agency officials, was the difficulty of attracting and retaining qualified staff in rural areas (94 percent of the states) and long distances between schools (83 percent of the states). These two factors clearly affect availability of service to children.

QUALITY/APPROPRIATENESS OF SERVICE

It has been frequently argued that the placement of autistic students with students labeled emotionally disturbed or mentally retarded is not appropriate. While there may be very strong advocacy for a categorical approach to serving autistic students, at present there is no evidence to suggest that grouping students solely on the basis of their identification as autistic improves the quality of education, improves the program, or enhances the educational outcomes.

Due to the heterogeneity of functional behavior among autistic children coupled with their common needs for assistance and development in socialization, language, and self-care, the segregated special class

may offer little that is different from programs directed at other categories of severely handicapped children. There is tremendous diversity within programs for autistic students and a fair degree of similarity between some of these programs and programs for students not labeled autistic, but having similar functional problems.

However, it may be argued that programs that are categorical would be designed with autistic students in mind and could be tailored to their individual needs. Also, when staff work together in a categorical program, opportunities are provided to develop and utilize unique curricula and to share information about successes and failures. It might be assumed that this would improve the quality of service.

It is possible that the categorical approach may help to focus a knowledge base for teachers, particularly when they are grouped in a centralized location. However, adopting a categorical approach in a rural area may cause the development of extremely small programs with one or two students and the net effect may be the isolation of staff members from other professionals with reduced opportunity to share ideas and improve teaching skills. The result may be a decrease in the quality of service provided for autistic students.

With the current requirement that IEP's be written for every handicapped child in school, utilizing team contributions to that IEP, it is quite likely that categorical special classes no longer have any advantage of specific response to child needs, if they ever did. The nature and level of professional preparation for the specific tasks that need to be accomplished, together with selected personal characteristics of the teacher do appear to make a difference. The intelligent, well-organized teacher who is something of a taskmaster, who keeps the students engaged in the academic task for as long as is possible, has been shown to affect the quality of instruction.

Quality of schooling is a function not only of the teacher and support staff, but also of the environment for learning--including models for behavior. It is certain that categorical programs are at a serious disadvantage for autistic children who need good models of language, social behavior, and self-care from which to learn.

No matter what type of delivery system is utilized, the school district will almost certainly find it necessary to reduce the ratio of pupils to teachers if the autistic child is to be properly managed and instructed, since such children are often not under normal verbal control. Teacher aides, or other non-professional personnel, often are employed for that purpose. While this can be an efficient means of increasing program effectiveness, the aides, to be most useful, also need appropriate training in management of behavior, characteristics of autistic children and in the various curricula that are being applied in the program.

For all personnel associated with programs for autistic pupils, it is much easier, and most cost effective, to provide highly specific in-service education in the local district than to establish resident programs at one or more universities in the state. As mentioned earlier here and pointed out in Helge (1981), teachers who attend urban universities do not

want to move to rural small towns for a job, and those who teach in rural towns find it extremely difficult to travel to urban universities for additional training. As a consequence, formal rules that demand levels or types of training not seen as critical to real world circumstances are typically ignored, faked or simply rejected.

CURRICULUM AND METHOD

While it was a professional catechism not so long ago to exclude parents from the educational program, professional growth in understanding strongly encouraged by the requirements of full parental participation embodied in PL 94-142 has dramatically changed that relationship. Most programs now rely very strongly on parents as a major partner in the treatment program. Whether the child needs assistance in learning to feed himself, dress himself, to communicate appropriately, or any of the myriad items that would fall into the major curricular areas, it is clear that most autistic children will make slow progress in a six-hour, or less, school day. Therefore, recognizing that parents are with their children many more hours in the week than are the professionals, it makes sense to try to cooperatively develop a program and cooperatively carry it out, with consistent attention to items of importance and consistent instructional and reinforcement procedures, whether the child is in school or at home.

Methodologies tend to fall into three major categories. Those are physical treatments such as drugs, diet, or end organ manipulation; one or another of the conditioning therapies or stimulus-response learning theory treatments; and some type of humanist or psychoeducational treatment. As methodologies, all of them would seem to have a place and may be reasonable for selected children and for selected objectives. However, the nature of the problem and the existing evidence would seem to argue for an eclectic methodology, applying the best elements of humanistic treatments, the strengths of stimulus-response learning theory methods and, where necessary for a specific medical problem, the inclusion of a physical control mechanism.

The important curricular areas we have mentioned earlier in this chapter are language and communication, self-help, social behaviors, pre-academic/academic and prevocational/vocational skills. That list may not be of much help in narrowing the territories the teacher must consider when planning for an individual child or group of children, but it does suggest the importance of focusing on relatively immediate and functional needs.

Many current writers about curriculum and methods for severely handicapped children have moved away from extended drill on isolated bits of behavior, which they earlier had hoped could be aggregated to produce normal, volitional, problem-solving behavior. Increasingly, one finds a belief that to obtain such normal behavior, the instruction should occur in circumstances similar to the environment in which the skill is to be used. Not only do severely handicapped children take longer to learn less, remember it for shorter periods of time, and make fewer inferences based on what they do know, they have very severe limitations in generalizing to

new locales and altered circumstances even when the situation is largely similar to that in which they were instructed.

Such characteristics strongly suggest that the educator focus on relevant skills and subskills, distribute practice over time and in the most "real" environment possible, in contrast to massed practice on "artificial" tasks in settings distinctly different from the natural environment. The curricular objective, popular in certain programs for autistic and other severely handicapped persons, to sit down, be quiet and make eye contact on command, well illustrates the isolated skill that gets far less support today than it did several years ago. As scholarly support develops for instruction in context, the curriculum for autistic children will become increasingly rational.

In developing the curriculum for one child or a group of children recognize that what is being planned is the totality of school controlled experiences for the child. In the best of circumstances, important segments of the child's home life will also be influenced through cooperative planning with the parents. The curriculum task is to organize instructional experiences such that the child will be enabled to develop age-appropriate functional skills for living, working and playing in the community. The test of relevance ought to be foremost as one considers curriculum topics and activities for such children. With such criteria in mind, it is unlikely that atomistic notions of underlying, or preparatory, skill development will predominate in the instructional program. In the resulting programs ring stackers, sewing cards, pounding boards and other devices to "improve fine motor coordination" will less likely be central than will vocational activities or personal care activities calling for fine motor coordination; language and communication instruction will not settle for in-classroom drill but will increasingly incorporate real world challenges in the community, such as transacting business in shops and restaurants.

To fulfill the promise of such a curriculum will require far more than a teacher inside a closed classroom. Obviously, the program will necessarily be more open, more involved with others in school and community, and more dependent upon additional personnel to manage the activities. Volunteers, paid aides, parents, and child and adolescent student "partners" or tutors all will be necessary to provide the intensity and variety of instructional experiences required to fulfill the potential of the children and the promise embodied in the phrase "a free, appropriate public education."

SUMMARY

What we have described here are a set of program options and a philosophical position on the education of autistic children. Our philosophy is relatively straightforward. Autistic children are well and truly encompassed in the definitions and descriptors of severely handicapped children; placement in a program serving a broadly defined group of severely handicapped is appropriate and, for many autistic children, may be more productive than placement in a narrowly defined autistic group. The curriculum should be functional, oriented to immediate and

long-term survival needs (self-help, language, social skills, academic and vocational skills) and delivered in the most "real" environment possible. The elements of assessment and treatment that give the best evidence of success, thus far, are found in areas normally considered the province of education. Thus, educators must face their responsibility to such children and cannot, legitimately, push the problem off on medical and ancillary medical professionals.

REFERENCES

- Abt Associates. Assessment of selected resources for severely handicapped children and youth: Volume 1: A state-of-the-art paper. Cambridge, MA: Abt Associates, Inc., 1974 (ERIC Document Reproduction Service, ED 134 614).
- Almond, P., Rodgers, S., & Krug, D. Mainstreaming: A model for including elementary students in the severely handicapped classroom. Teaching Exceptional Children, Summer, 1979, 11(4), 135-139.
- Bartak, L., & Rutter, M. Differences between mentally retarded and normally intelligent autistic children. Journal of Autism and Childhood Schizophrenia, 1976, 6, 109-120.
- Corbett, J. Medical management. In L. Wing (Ed.), Early childhood autism: Clinical, educational and social aspects. New York: Pergamon Press, 1976.
- Creak, E. M. Schizophrenic syndrome in childhood: Progress report of a working party. Cerebral Palsy Bulletin, 1961, 3, 501-504.
- Creak, E. M. Schizophrenic syndrome in childhood: Further progress report of a working party. Developmental Medicine and Child Neurology, 1964, 6, 530-535.
- DeMyer, M. K., Churchill, D. W., Pontius, W., & Gilkey, K. M. A comparison of five diagnostic systems for childhood schizophrenia and infantile autism. Journal of Autism and Childhood Schizophrenia, 1971, 1, 175-189.
- Deno, E. Instructional alternatives for exceptional children. Reston, VA: Council for Exceptional Children, 1972.
- Dunlap, G., Kogel, R. L., & Egel, A. L. Autistic children in school. Exceptional Children, April, 1979, 45(7), 552-558.
- Furlong, A. D. The heterogeneity of autistic children. In C. K. Lowry, K. Quinn & M. A. Stewart, Serving autistic children within a large rural area: A resource manual. Iowa City, Iowa: University of Iowa, n.d.
- Haring, N. G. The severely handicapped. In N. G. Haring (Ed.), Behavior of Exceptional Children. 2nd ed. Columbus, OH: Charles E. Merrill, 1978.
- Helge, D. Problems in implementing comprehensive special education programming in rural areas. Exceptional Children, 1981, 47(7), 514-520.
- Hington, J. N., & Bryson, C. Q. Recent developments in the study of early childhood psychoses: Infantile autism, childhood schizophrenia, and related disorders. In S. Chess and A. Thomas (Eds.), Annual progress in child psychiatry and child development, 1973. New York: Brunner/Mazel, 1974.

- Kanner, L. Autistic disturbances of affective contact. Nervous Child, 1943, 2, 217-250.
- Kozloff, M. A. Reaching the autistic child: A parent training program. Champaign, IL: Research Press, 1973.
- Lovaas, O. I., Schreibman, L., & Koegel, R. A behavior modification approach to the treatment of autistic children. In E. Schopler and R. Reichler (Eds.), Psychopathology and Child Development. New York: Plenum Press, 1976.
- Lowry, C. K., Quinn, K., & Stewart, M. A. Serving autistic children within a large rural area: A resource manual. Iowa City, Iowa: The University of Iowa, n.d.
- Ornitz, E. M., & Ritvo, E. R. The syndrome of autism: A critical review. American Journal of Psychiatry, June, 1976, 133(6), 609-621.
- Rimland, B. Infantile autism: The syndrome and its implication for a neural theory of behavior. New York: Appleton-Century-Crofts, 1964.
- Rimland, B., Callaway, E., & Dreyfus, P. The effect of high doses of vitamin B₆ on autistic children: A double blind cross-over study. American Journal of Psychiatry, 1978, 135(4), 472-475.
- Rutter, M. Diagnosis and definition of childhood autism. Journal of Autism and Childhood Schizophrenia, June, 1978, 8(2), 139-161.
- Rutter, M. A tri-axial classification of mental disorders in childhood. Journal of Child Psychology and Psychiatry, 1969, 10, 41-61.
- Schopler, E., Reichler, R., & Lansing, M. Individualized assessment and treatment for autistic and developmentally disabled children. Vols. I and II. Baltimore, MD: University Park Press, 1980.
- Stuecher, Uwe. Tommy: A treatment study of an autistic child. Reston, VA: Council for Exceptional Children, 1972.
- Torrey, E. G., Hersch, S. P., & McCabe, K. D. Early childhood psychosis and bleeding during pregnancy: A prospective study of gravid women and their offspring. Journal of Autism and Childhood Schizophrenia, 1975, 5, 287.

An Assessment Process for Autistic Children

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AN ASSESSMENT PROCESS FOR AUTISTIC CHILDREN

Beth J. Dorsey

INTRODUCTION

It is a challenge to develop a program for an autistic child that fully considers the child's strengths, weaknesses, ability level, learning style, behavioral deficits and excesses, and long-term goals, and uses this data to develop functional age-appropriate interventions. The object of this chapter is to provide a workable framework for this difficult purpose.

Assessment and programming are not two independent functions, as appropriate programming only occurs after a thorough evaluation has been made of a child's skills and behaviors in different situations. The issues of assessment, "testability," and recommended modes of treatment have been intertwined since Kanner (1943) first delineated the characteristics of autism. At that time, autistic children were thought to be of normal intelligence. This assumption was not based on empirical data, since researchers considered this population untestable due to their interfering and maladaptive behavior (Kanner, 1943). It was acknowledged that autistic children function at a lower or "retarded" level, but the existence in the child's repertoire of one or two higher or "peak" skills reinforced the belief of normal intelligence. It was, therefore, thought that the "autism" masked other abilities and skills at their chronological age (DeMyer, Barton, Alpern, Kimberlin, Allen, Yang & Steele, 1974). As a result of this hypothesis of "hidden" normal intelligence, the preferred mode of treatment was psychotherapy.

In the mid sixties, this hypothesis was empirically investigated and found to be false (Alpern, 1967; DeMyer, 1971; Rutter, 1966). Most (80 percent) autistic children were found to be retarded with many (60 percent) moderately to severely impaired in intellectual functioning. It is shown that standardized assessment methods could validly and reliably be used to measure the intelligence of autistic children, if the instruments contained tasks the child could perform (Alpern, 1967). Invariably, this consisted of using measures usually employed with younger children, containing a minimum of language tasks and mainly composed of performance based items.

Around the time these findings were recognized, the recommended approach for treatment also was changing. This shift was related to a number of additional factors, including a change in the hypothesized etiology, the recognition of the lifelong nature of the impairment, and the severity of the syndrome. The recommended mode of treatment changed to structured educational programming instead of psychotherapy (Rutter, 1971). Once the actual level of functioning of most autistic individuals was established, the recommended treatment strategies were adjusted to deal with the problems in a more realistic and pragmatic fashion. This

same basic process continues to work best in the assessment and development of each autistic child's educational program; once the child's functioning level and actual skills are delineated, a realistic program can then be developed.

A few years later, state and federal legislation mandated a free and appropriate education for all children, regardless of the severity of their handicap. Guidelines were established requiring the development of an individual educational plan (IEP) for each handicapped child. This plan was required to be developed by a multi-disciplinary educational team (teacher, speech clinician, consultant, psychologist, and others) working with the child and his/her family. Each plan (IEP) was to specify the child's present level of educational performance and annual goals, including short and long-term objectives, with objective criteria for determining their achievement (PL 94-142, 1975). In order to fulfill these legislated mandates, a considerable amount of detailed information needs to be gathered about the child and used in the designing of appropriate goals and interventions. The complete process of gathering, synthesizing, and using this data to develop an individual educational plan is assessment. The purpose of this chapter is to discuss factors to consider when assessing an autistic child, and also to provide a method to use in the development of an individual education program (IEP).

Characteristics of Autism Affecting the Assessment Process

The label of diagnosis of autism describes a constellation of behaviors exhibited by a child which are apparent before the age of 30 months. These include:

1. Disturbance(s) of developmental rates and sequences.
2. Disturbance(s) of response to sensory stimuli.
3. Disturbance(s) of speech/language, language cognition, and non-verbal language.
4. Disturbance(s) of the capacity to appropriately relate to people, events, and objects (Ritvo & Freeman, 1977).

A diagnosis of autism indicates to educators the areas in which a child generally has difficulties. The diagnosis does not provide specific information about the child's ability level, specific or interfering maladaptive behaviors, academic, language, motor, social or adaptive skills, appropriate educational goals, and curriculum or classroom placement. Many of the problems the autistic child exhibits are seen in children with other disabilities, i.e., mental retardation, language disorders, and behavioral disorders. The difference is that the cumulative effect of the complete cluster of behaviors defining the syndrome has a particularly debilitating effect on the child's skills and functioning (more than the sum of the individual problems) and requires in-depth assessment for appropriate programming. The general assessment process is similar for all children, regardless of handicapping conditions, and the specific nature of an individual handicapped child influences the choice of methods and instruments. Due to the number of problems an autistic child exhibits, the assessment of certain areas of functioning, as well as instruments and methods rarely used with other disabilities, need to be routinely considered and employed.

The problems that are endemic to the autistic population of uneven skill profile, language and social problems, self-stimulation and other maladaptive behavior, over-selectivity and lack of generalization, and problems in "comprehension" need to be considered in the development of an assessment plan as well as in the designing of a child's program.

Uneven Skill Profile

Children with autism characteristically have an uneven skill profile. This is seen across skill areas (motor vs. language vs. self-help vs. social vs. academic skills) and within one skill area (a child may be facile in organizing and fitting pieces by shape, but cannot visually organize material by content). A child may be competent in some skills but function at a severely retarded level in other areas, making it impossible to predict the level of skills in any one area from the knowledge of the child's other abilities. It is necessary to consider the different aspects of the child's behavior in a systematic way in order to pinpoint problems and compensating skills (Wing, 1976). For example, a four-year-old child with autism cannot be assumed to globally function at the 18-month level because his receptive language is at that level. Likewise, just because a five year old with autism began to read at three years old, it cannot be assumed that he has advanced skills in other areas. Thus, when assessing children with uneven skills, it is essential to use a variety of methods and instruments in order to acquire general information about the child's skill patterns across different areas, and to gather in-depth knowledge of the child's skills in particular areas.

Language

Central to the disability of autism are the child's deficits in the area of language, consisting of both delays and deviations in the normal developmental sequence. This includes impairment in the child's understandings of spoken language, gestures, and written information, problems in expressive skills such as echolalia, pronoun reversal, and idiosyncratic or metaphorical language, and problems in rate and prosody (Rutter, 1978). Significant problems also occur in the areas of pragmatics and communication.*

Children generally develop an understanding of the communication process and many social and interpersonal skills without formal instruction. These areas are rarely assessed with other populations, and it is often taken for granted that once a child has acquired speech, he/she will use it to communicate. This assumption cannot be made with the autistic child. The degree in which children use their language, the situations in which it occurs, and the purposes for which it is used need to be carefully and thoroughly evaluated.

Social Skills

In the area of social skills, children with autism often lack rudimentary skills including: eye contact, receiving and seeking affection,

*For a more comprehensive discussion of this issue, please refer to the chapter by McLean and McLean.

play skills and peer interactions. Assessment in this area is difficult and is hampered by the lack of a well-recognized developmental sequence of social behaviors (Lord & O'Neill, 1980); there are no comprehensive assessment tools or teaching hierarchies to which to refer. An added problem is that many teachers and psychologists have a poor understanding of the skills comprising this area of development. Like communication, it usually spontaneously develops and doesn't need to be taught. Deviations and deficits from normal development affect the child's social skills as much as their language skills. Occasionally with age, there is some spontaneous improvement in the child's social skills, especially in interactions with adults, though it rarely achieves "normality" even if the child's mental age is considered. Social problems and aloofness frequently limit and depress the child's functioning and often hinder later adult adjustment (especially in higher functioning autistic individuals). Because of the long-term nature of these problems the child's social skills should be evaluated and interventions designed to improve these skills.

Self-Stimulation and Maladaptive Behavior

Many autistic children have a repertoire of self-stimulatory behaviors which interfere with learning and engagement in purposeful activities, and which may be difficult to interrupt. For a small subgroup of children, these behaviors may take a self-abusive form, such as head banging or hand biting; if this occurs, an in-depth analysis of such behaviors is imperative. In addition to self-stimulatory behavior, autistic children often exhibit other types of maladaptive behaviors, including screaming, tantrums, throwing objects, assaultive behavior, and non-compliance. As with other children (handicapped or non-handicapped), the occurrence of these behaviors needs to be evaluated in a systematic and thorough manner. Because of the autistic child's multiply-handicapped condition, it is important that the expectations or demands made on the child are within their repertoire, as failure to consider this factor may contribute to the development of more inappropriate behaviors.

Overselectivity and Generalization

Problems of overselectivity and poor generalization also commonly impede autistic children's learning and functioning. If a child with autism can perform a task in one setting with a certain set of directions and one teacher, it cannot be assumed if one of these variables is changed that the child could perform the task. Nor should it be assumed that a child can generalize the task to other situations where it is commonly involved in the everyday environment. When, investigating the skill repertoire of a child with autism, it is not sufficient to elicit the skill in a one-time testing situation, as it is necessary to see if the child can use the skill in the situations where it naturally occurs. Problems in generalization are commonly found in retarded children, though in the autistic population they also occur with the non-retarded child. For example, an autistic child with an above-average I.Q. was tested by an examiner familiar with the population who asked the boy to draw a picture of himself. When the child didn't perform the task, the direction was changed to "draw a picture of a boy" and there still was no response. The direction was then given again using the word "person" and a crude

model was drawn, but the child still did not perform the task. After the testing session was completed, the boy took some of his work back to show his teacher. The examiner mentioned that the child didn't draw a person, which surprised the teacher, and she asked the child to draw a picture of her. He quickly and competently followed the direction. This example again illustrates the importance of carefully observing where the skill occurs, with whom, and under what conditions. General or comprehensive conclusions about a skill cannot be made after observing it in only one setting or with one set of instructions and one type of environmental demand. Frequently, a parent and a teacher will disagree about a child's performance of a particular task and they may doubt the other's veracity. What may be occurring may not be a matter of the parent or the teacher being inaccurate, but rather both parties accurately reporting on the skill or lack of skill they have observed in different settings. Problems in generalization influence the assessment process, communication between people working with the child, and teaching strategies.

Understanding of Incoming Information

A global way to understand the complex facets of the autistic child's problems is to think of it as a deficit in making "sense" of or understanding the various types of information he/she receives. Autistic children have difficulty understanding social cues, concepts, and abstractions. Frequently, they don't understand the concept behind the skill they are taught or how to apply it to the situation where it is used, but rather they learn the task as a rote or memory skill. They do not appear to use "meaning" in either their memory or thought process (Rutter, 1979). Hermelin and O'Connor (1970) have concluded that the autistic child's language deficit is only one aspect of a more general inability to use signs and symbols, a disability which principally involves a deficit in the coding, extraction, or organization of incoming information. Autistic children can learn, but frequently what they learn is the form of information or a rote skill. Generally, they are more adaptive at tasks which suggest their own solution, which are visual, or which can be accomplished without needing to understand the underlying concept, such as vocational skills requiring sorting, or assembling and manipulative tasks.

To comprehensively evaluate an autistic child is an arduous and time-consuming endeavor. Wing (1976) feels "the only way to obtain a complete picture is to assemble each detail piece by piece like a jig saw puzzle." This chapter will provide a framework to use in accomplishing this difficult task.

OVERVIEW: THE ASSESSMENT PROCESS

The assessment process to be described in this chapter provides a way to organize information from multiple data sources by a multidisciplinary team into an individualized educational program. In the development of the program, the data collected on the child's skills and behaviors, the manner in which they are used, and the child's learning style are all considered and integrated. In order to impose some structure on this process, the sequence starts with the gathering of global information about the child, and progresses toward more in-depth investigation of specific behaviors (Smith, 1980). It begins with the use of efficient

but general measures and then uses instruments and methods selected to examine specific skills or areas, in order to better understand the total child, the referral concerns, and discrepancies in the child's performance. The complete process consists of two distinct phases, each containing three steps:

Phase I. Learning About the Child

- Step 1. Past and Current Skill Use
- Step 2. Standardized Evaluation
- Step 3. Integration of Data

Phase II. Program Development and Implementation

- Step 1. In-Depth Evaluation
- Step 2. Program Development
- Step 3. Program Monitoring

Phase I. Learning About the Child

The first phase of the process is concerned with learning about the child's skills and behaviors. Information is gathered from people most familiar with the child and by direct testing of the child. The data is then discussed and analyzed by the full assessment team and used in the formulation of long-term goals.

Step 1. Past and Current Skills

The process starts by examining the child's current and past skill use. During this component, information is gathered about the child's history and the behaviors the child currently exhibits on a daily basis. Parents and teachers are valuable sources of this information, and the process starts by tapping their knowledge about the child. This helps an examiner gain familiarity with the child's specific problems and provides information useful for selecting appropriate tests and procedures. The major objective of the first step is the development of hypotheses or questions to use to structure the collection of data for subsequent steps of the process. More specifically, these preliminary hypotheses deal with differences in the child's functioning in different settings, and with the major concerns voiced by the parents and/or teachers which will require in-depth analysis.

Step 2. Standardized Evaluation

This part of the assessment process directly identifies the specific skills the child can perform and investigates the way a child learns most effectively. In order to accomplish this task, standardized instruments for measuring achievement and ability are used to observe the child's responses to different tasks and materials and the behaviors that interfere with learning. Different teaching and management techniques are systematically tried to study their effect on the child's performance. This provides information about the child's problem-solving strategies and pattern of skills across different areas and within each area which will be used in the development of program interventions. This component also provides a

comparison of the child's skills and abilities with other children of the same age. This normative reference is important in the development of realistic expectations and programming goals.

Step 3. Integration of Data

During the third step of this phase of the assessment process, information from the first two steps is integrated and reviewed by the full assessment team. Initial hypotheses developed during step one are discussed and, if warranted, reformulated on the basis of information gathered during the standardized evaluation. The results are used in the formulation of long-term goals. If a purpose of the evaluation was placement, at this point there is sufficient data to make a realistic placement decision. Once long-term goals are established, the major objective of this phase of the assessment process has been reached, and this portion is concluded.

Phase II. Program Development and Implementation

The purpose of the second phase of the assessment process is to transform the gathered data into a viable, implementable program. Most professionals, regardless of discipline, strongly feel the goal of assessment is program planning, including the development of long- and short-term goals and interventions to achieve them. The aim is to make the information useful to the professionals working directly with the child. In practice, especially in the past, this often did not occur and this phase was the weakest part of the process. Assessment which results only in placement is not useful, because it has not gone far enough. This model emphasizes the collection of information from varied sources by a multidisciplinary staff which is used in the development of the child's program. The process is conceived as ongoing, as both the child and the environment change, and the child's program needs continual adjustment to insure it is beneficial.

Step 1. Synthesis and Re-evaluation

During this step of the process, any area where questions or inconsistencies emerge is evaluated in detail. It is an optional step, specific to the child's skills and behaviors. It is used only when more information is needed to develop realistic program goals or strategies. The methods used to provide more analytical information are behavioral and task analysis, prescriptive teaching, and systematic observation. This step is completed when the team feels they have enough information for program development.

Step 2. Program Development

In this step, all the compiled data is used to develop the child's individual educational plan. This involves the formulation of short-term goals and designing activities to meet them using techniques found to be most effective for that child. For autistic children, behavioral objectives are insufficient. Goals should also specify content of the instruction, functional application, context, and conditions of performance (Lord & O'Neill, 1980).

Step 3. Program Monitoring

This step of the process is conceived as ongoing and has an evaluative function. As it is recognized that a child changes and progresses, even the most carefully designed plan will need continuous adjustment and monitoring.

As has been stated, the goal of the complete process is a well-designed education program. An advantage in using a comprehensive method is the development of a firm foundation on which to base a child's program. This will need periodical re-evaluation and modification, but it should not be necessary to totally "re-vamp" the program each year. Parents and teachers frequently complain about the amount of time lost each year, in getting to know a child, and in evaluating and developing goals. This is particularly frustrating to parents, who feel the process is redundant, since often the same goals are re-established. By using a more comprehensive assessment, based on a multiple data source, specifying short and long goals and techniques to use in teaching, each teacher will not need to start over each September. Short-term goals change, but with clearer and more complete documentation, less time will be spent on their reformulation and more time on teaching. The entire process is conceptualized as ongoing and cyclical, re-evaluation should occur when needed, and when mandated by PL 94-142 guidelines.

PHASE I. LEARNING ABOUT THE CHILD

Step 1. Past and Current Skill Use

In the first step of the assessment process, information is gathered about the child's present and past behaviors from people most familiar with the child. This data is traditionally collected, and usually includes reviewing past records and/or talking with parents and teachers. However, due to the working style and orientation of the examiner, great variability occurs in the areas and specificity of the information collected. It makes more sense to collect this data in a comprehensive and systematic manner. This information can then be used to determine the areas needing more in-depth evaluation, and to provide valuable information for appropriate test selection.

Parents or guardians should be included from the beginning of the assessment process. They have an important role, both in the evaluation process and the education of their severely handicapped child, since they usually possess the most thorough, multi-faceted knowledge about the child. Although Public Law 94-142 mandates parental involvement, parents frequently are included in the educational process solely for legal purposes. Within this population, professionals of all disciplines and parents must pool their knowledge of the child, the nature of the disability, and the most current and recommended intervention practices, in order to develop and implement a meaningful educational program. Research with autistic children has shown that the most significant progress occurs when an active collaboration exists between parents and professionals (Schopler, 1979). Parents at times may disagree about classification, test results, or curriculum. Regardless, they possess a vast quantity of useful

information and a unique understanding of their child which should be respected and considered, since they will be centrally involved in the long-term care of the child.

Parents of severely handicapped children frequently have had negative experiences with professionals. Consequently, it is important to establish rapport and cooperation early in the assessment process. During the initial contact, it is beneficial to explain the reason(s) for the evaluation, the procedures to be used, and the intended use of the data, in jargon-free, understandable language. Parents don't want to repeatedly hear (and this frequently has contributed to negative attitudes concerning professionals) about the skills their child does not perform. Rather, it is more beneficial to find out which skills the child has and uses, and how the skills were acquired. Communication usually is facilitated by using this type of positive approach.

Structured interviews using adaptive behavior scales, behavior checklists, and informal assessment questionnaires are an efficient way to acquire general information about a child in a systematic manner. These instruments enhance discussion and provide a way for both parties to focus on specific areas in an organized and less threatening manner. The specific objectives for this step include:

- documenting the skills the child uses in his/her everyday environment;
- documenting the situations where the child uses the skills;
- documenting the conditions needed to elicit the skill;
- documenting the behaviors (maladaptive and adaptive) the child engages in and which are a concern to parents and teachers;
- documenting the social and play skills in the child's repertoire.

The next sections will discuss the three types of instruments to use to collect this information.

A. Adaptive Behavior

A currently accepted definition of adaptive behavior is:

The effectiveness or degree with which the individual meets the standards of personal independence and social responsibility accepted by his age or culture. (Grossman, 1973)

Implied in this definition are three criteria: (1) The ability to function in an independent manner to meet basic physical needs; (2) participating as an integral member of the community; and (3) maintaining responsible social relations (Coulter & Morrow, 1978).

An additional criterion which is important when working with handicapped children that is implied in the definition is the issue of developmental trends and age-appropriate behavior:

impairment in adaptive behavior is seen as the individual's ineffectiveness in adapting to the demands of his environment as viewed from a developmental standpoint. (Robinson & Robinson, 1976)

Developmental changes that occur with maturation are built into the adaptive behavior scales. Different skills and factors measured are important at different ages. For example, physical development is important in younger children, but this factor diminishes in importance with age, and community self-sufficiency and personal social responsibility are not a measurable factor until a later age. (Lambert & Nicole, 1976; Nihara, 1976).

Instruments used to document adaptive behavior are usually rating scales or checklists administered to a third party (parent or teacher) familiar with the child. The scales sample a wide variety of behaviors: self-help skills, motor skills, language skills, and responsibility and independence. The range of skills evaluated is more inclusive and diverse than measures of either achievement or ability. Adaptive behavior scales have been designed and used for a number of different purposes, including identification/placement, intervention/programming, program evaluation, and monitoring of individual progress. In a review of a number of different instruments, it was found that some scales or checklists are more suitable for certain purposes, but no one scale is flexible enough to be satisfactory for all purposes (Coulter & Morrow, 1978). Scales vary in their construction. Some employ a unitary conceptualization and result in a single score, such as the Vineland Sociality Maturity Scale. Others use a multiple-domain approach, where different areas or strands of behavior are examined and scored individually, with no overall score, i.e., AAMD Adaptive Behavior Scale, Alpern-Boll Developmental Profile, and Callier-Azusa Scale.

Some scales are standardized and provide normed references yielding a developmental or social age, while still others use a criterion referenced format which may or may not also contain norm referenced information.

As there are a large number of published adaptive behavior scales, the following variables should be considered when selecting a specific instrument:

1. The intended use of the instrument and the level of specificity necessary to fulfill the purpose;
2. The type of scale construction and data needed to accomplish the intended purposes;
3. Consumer evaluation, including administration time, cost, ease in scoring and interpretation, and examiner familiarity;
4. The age and functioning level of the child to be evaluated; some scales do not divide the skill into small enough aspects to be useful with severely handicapped children. (Coulter & Morrow, 1978)

In assessing young, recently-identified children, there are three important factors to consider: select an instrument which provides some normed reference information (preferably developmental age scores); a fairly short instrument (taking less than 45 minutes to complete in an

interview); one which uses a multiple-domain approach. When working with older children or for re-evaluation purposes, these factors are less important and other scales would be more useful. Some instruments are very specific and are important to use in developing programs, and these will be discussed in the first step of the second phase of the process. Table 1 is a brief summary of some commonly used and easily available instruments.

B. Behavior Rating Scales, Checklists and Observations

The use of these behavioral measures provides helpful information in the assessment of children with inappropriate and maladaptive behaviors. A number of behavior rating scales and observation codes have been designed to distinguish autism from other disabilities. They have been developed by school programs, as parts of specially designed tests for autistic children, and for research purposes. They are valuable because of their relative reliability and relatively objective format for structuring observations (Holovska & Domsic, 1977). These measures may be used for a variety of purposes including:

1. Screening Tools: To identify children suspected of being autistic. Due to the low incidence of autism, a screening tool is helpful in school or clinic settings, where professionals are unfamiliar with and infrequently see an autistic child. These children then may be referred for more extensive diagnostics. The Autism Screening Instrument for Educational Planning was designed especially for that purpose; one of its most useful components is its behavior checklist.
2. Diagnostic Tools: To define development criteria for the diagnosis of autism and to measure the relative severity of the impairment. Diagnosis is frequently difficult and has been fraught with disagreement and subjective opinions. By using a standardized instrument, the difficult process of diagnosis can become more objective and consistent between professionals. The stated purpose of the Childhood Autism Rating Scale (CARS) (Schopler & Reichler, 1976), the Behavior Observation Scale (BOS) (Ritvo & Freeman, 1979) and the R-2 Rimland Checklist (Rimland, 1971) is diagnosis. At this time, there have been no studies comparing these instruments to see if they are identifying the same behavioral cluster. This has been a problem in the past (DeMyer, Churchill, Pontious, & Gilkey, 1971).
3. Prescriptive Measures: To determine which behavior(s) the child is exhibiting that are problematic. They are helpful for prioritizing goals and identifying behaviors in need of immediate intervention. Further assessment of these particular behaviors is usually necessary before a specific intervention can be selected. This will be discussed later in Phase II, Step 1.
4. Recording Progress and Change: To provide a record of how the child's behavior has changed over time. Children with autism, like all children, change as they grow older. Some problems are more pronounced at certain ages and diminish as the child matures.

Table 1

Summary of Selected Adaptive Behavior Measures

Test, Author, Publisher	Age Range	Measurement Reference	Organization of Components	Comments
<u>Adaptive Behavior Scale</u> Mihira, Foster, Shellhaus and Leland (1975) Edmark Associates 1329 Northrup Way Bellevue, WA 98005	3 yrs. to 69 yrs.	Normed and criterion referenced	2 parts, 24 subscales (independent functioning, physical development, domestic activity, un- trustworthy behavior).	- normed on institutionalized clients. - most useful with moderately retarded children above eight years old - Part I is useful for programming. - Part II has questionable reliability, defines behaviors poorly, and is difficult to use with autistic children.
<u>Balthazar Scales of Adaptive Behavior</u> 1. Scales of Functional Independence. 2. Scales of Social Adaption. Balthazar (1973) Consulting Psychologists Press 577 College Avenue Palo Alto, CA 94306	5 yrs. to 56 yrs.	Criterion referenced	More than 8 major areas, 16 subscales (toileting, eating, unadaptive self-directed behaviors, verbal communication, play activities).	- normed on institutionalized population. - provides good observational data for program development and monitoring change. - format awkward and inconvenient.
Behavior Characteristics Progress Chart (BCP) 1974 Santa Cruz County Office of Education Vort Corporation Box 11132 Palo Alto, CA 94306	Infant to Adult	Criterion referenced	More than 50 domains, covering a wide range of areas and developmental levels.	- useful in programming. - useful in measuring progress. - complete chart, unwieldy to use, but good for specific skill sequences. - some strands need additional steps or adaption for individual children.
<u>Callier-Azusa Scale</u> Stilman (ed.) (1978) Callier Center for Communication Disorders University of Texas 1966 Inwood Road Dallas, TX 75235	Infant to 8 yrs.	Normed referenced	3 subscales (perceptual abilities, daily living skills, language development, motor development, socialization).	- good instrument to use with very young or low functioning children. - useful for programming. - useful for measuring progress for low functioning children. - time consuming to administer.

Table 1 (continued)

Test, Author, Publisher	Age Range	Normed and Criterion Referenced	Organization of Components	Comments
<u>Comprehensive Behavioral Checklist</u> Porter (1974) Edmark Associates 1120 Northway Way Bellevue, WA 98005	2 yrs. to Adult	Normed and criterion referenced	10 domains (self-help, physical development, home duties, vocational behaviors, economic behaviors, independent travel).	- difficult to summarize and interpret quickly. - provides general overview of individual's performance
<u>Developmental Profile II</u> Alpern, Bell, and Shewar (1980) Psychological Develop- ment Publications P.O. Box 1150 Aptos, CA 95012	Infant to 9 yrs.	Normed referenced	5 scales (physical skills, self-help skills, communica- tion skills, language skills, and academic skills).	- clearly illustrates child's pattern of skills across domains. - most useful with children functioning below 8 years old. - not specific enough to be used for programming. - brief and easy to administer.
<u>Learning Accomplishment Profile-Stimulus Edition-B</u> Lefley, Griffin, and Sanford (1977) Kaplan Press 600 Jamieson Road Uniontown, PA 15101	6 mos. to 72 mos.	Normed and criterion referenced	5 major areas (gross motor, fine motor, self-help, cognitive and language with 11 subtests).	- developmental ages were derived from a variety of sources (not all agreeing on age of skill acquisition). - useful for programming. - useful for monitoring progress. - not useful for low functioning children. - language section not helpful for programming.
<u>Pre-School Attainment Record</u> Dall (1966) American Guidance Serv. Publishers Building Circle Pines, MN 55104	6 mos. to 7 yrs.	Normed referenced	6 domains, 8 subtests (ambulation, manipulation, request, creativity, communication, responsibility, information, ideation).	- items within each category are not always appropriately classified. - lacks normative data. - some items contain several behaviors. - criteria for passing the items are not specified.
<u>YAM Assessment System</u> Sailor and Rin (1975) B & W Enterprises P.O. Box 1142 Lawrence, KS 66044	3 yrs. to 16 yrs.	Normed referenced	4 major domains with specific subtests within each (self-help, motor, communication, social skills).	- not useful for programming, screening tool. - normed on institutionalized population.
<u>Vineland Social Maturity Scale</u> Dall (1965) American Guidance Serv. Publishers Building Circle Pines, MN 55014	Infant to 30 yrs.	Normed referenced	5 behavior clusters (self-help, physical development, language, vocational, social, self-direction).	- normed on institutionalized population. - age norms are out of date. - one general score. - different items appear at different age levels (Binet type scale).

Other behaviors need specific intervention for improvement to occur. A behavior checklist administered at six-month or yearly intervals can record this change and programming priorities can be adjusted accordingly.

5. Facilitating Communication: To help compare the different behaviors a child is exhibiting in different environments. They can be a useful, objective way for parents and professionals to discuss areas of disagreement or differing perceptions of the problem and/or the severity of a particular behavior.

Behavior checklists are included in the first step of the process to identify behaviors that are problematic, limiting, and interfering to the child, and alert team members who will be testing the child about problems which may be encountered. As with adaptive behavior measures, a more in-depth evaluation of the identified problem is usually required before interventions can be developed.

C. Informal Assessment

A third method which provides a large quantity of general information about a child is informal assessment. This can take a variety of forms: a list of questions developed by a teacher, a questionnaire, a format to structure an interview or observation, or a situation designed to elicit a certain behavior. These are helpful techniques providing data specific to the referral concern(s), the child and/or disability, and include information not usually obtained in standardized, published instruments. The use of informal questionnaires to structure interviews or observations early in the assessment process, helps in the selection of standardized instruments, identifies areas needing more detailed evaluation, and alerts parents and teachers to areas needing careful observation.

An informal or examiner designed questionnaire provides descriptive information about the child's pattern of behaviors and skills. It does not provide comparative information, is not necessarily based on a sound theoretical framework, and does not specify criteria for measuring the response. It is a helpful, efficient, and direct way, however, to collect a specified body of information about the child and his/her functioning in every-day, familiar environments.

Informal questionnaires or procedures may be specific (one skill) or as extensive (many different behaviors) as the examiner desires. The aim is to gather information that is useful and not easily acquired in other ways. A knowledge of autism and the strengths, weaknesses, and skills evaluated by standardized tests is helpful when designing a questionnaire. The following is a list of questions in the areas of play and social interactions, language, school behavior, cognitive skills, and self-help skills that have been found to be useful when gathering information about an autistic child and which are not answered by other information sources. If the child being evaluated is older or higher functioning, questions on different areas and skills would be included.

Table 2

Summary of Behavioral Scales used in the Differential Diagnosis of Autism

Childhood Autism Rating Scale (CARS): The CARS was developed in 1974 by Dr. Schopler as a companion instrument to use with the Psychoeducational Profile (PEP) and is similar to the PEP pathology scale. It is a fifteen-item scale, adapted from the Creak Working Party definition of childhood psychosis (1960) for use with pre-school aged children. It is designed to be used during a diagnostic evaluation, where the behaviors and the reactions of the child are observed and rated in each area. Each behavior is scored on a four-point scale, whereas the pathology scale of the PEP uses a three-point scale. The diagnostic category is determined by the total score and the score pattern.

Comments: No studies have been published on either the reliability or validity of the scale. Clinically it appears rather subjective, and it is difficult to achieve significant interrater reliability. However, it is a useful observation guide when evaluating children with autistic behaviors.

Autism Behavior Checklist (ABC): The ABC is one component of the Autism Screening Instrument for Educational Purposes (1978) designed to be used in the schools for identification and placement of autistic children. It is a checklist of 56 behaviors from five symptom areas: sensory, relating, body and object use, language, social and self-help, to be completed by a person familiar with the child. Each item is scored as present or absent, and is weighted from 1-4 depending on the frequency observed in the autistic population. The test has been standardized on autistic subjects of all ages (18 months-35 years) and other severely handicapped populations for which behavior patterns have been established. It appears to have been carefully designed; statistical information is present in the manual.

Comments: It is an easy instrument to use. The problem is many children diagnosed autistic by other means do not receive scores in the autistic range for this test. Only young autistic children or low functioning children receive scores in the criterion range.

Rimland's Diagnostic Checklist for Behavior Disturbed Children (E-2): The E-2 (1971), consists of 80 questions to be compiled by the child's parents about development and behavior from birth through 5 years. The goal of the checklist is to discriminate Kanner's Syndrome children from schizophrenic and other "autistic type" children. An expanded version consisting of 250 questions (E-3) (1974) contains questions concerning the child's behaviors, familiar disorders, blood types, drugs taken during pregnancy, and the effects of various treatments. The (E-3) is used mostly for medical research. (Rimland, 1974).

Behavior Observation Scale (BOS): The goal of this scale is the development of objective diagnostic criteria for the syndrome of autism. The scale consists of 67 objectively defined behaviors and is used as a systematic observation code for observing behavior in a playroom situation. Presently, the scale is used solely for research purposes, but it offers a potentially useful alternative approach to the diagnosis and quantification of autistic behavior. (Freeman, Guthrie, Ritvo, Schroth, Glass, & Frankel, 1979)

Table 2 (continued)

Muskegon Index of Autistic Behaviors: This is a checklist developed to be used as a screening tool to assist school or clinic staff in identifying autistic children. The checklist provides some objective-observational data when completed by people who are familiar with the child. The checklist is composed of five scales: extreme aloneness, non-communication language, perceptual disturbances, cognitive/motor distortions, inappropriate emotional reactions, and uses a three-point scoring system. (Holovka & Domsic, 1977).

Table 3

Informal Assessment Guide

This questionnaire can be used as an interview with a parent or a teacher or as an observation guide. It provides information about the child's skill in play and social interactions, language, school behaviors, cognitive skills, and self-help skills.

A. Play and Social Interactions:

1. Does the child spontaneously choose the same toys or activity each day during free time? Does he/she use them appropriately?
2. Does the child spontaneously engage in constructive free play activities? If so, what are they?
3. In order for the child to engage in free play activities, does the situation need to be structured, or does an adult need to start the activity?
4. Does the child spontaneously engage in peer play? If so, is he/she the initiator of the interaction? How long and how frequently does it occur?
5. If another child initiates an interaction, will he/she stay in the situation? What types of play situations will the child continue in and for what length of time?
6. What toys, activities, or materials does the child seem to prefer and choose?
7. What will the child choose to do during unstructured time at school? At home?
8. If the child has siblings, what type of "play" interactions do they engage in?
9. What is the child's response to physical contact (hugs, pats, tickles, rough housing)?
10. Does the child spontaneously show affection to significant others in the environment?
11. Does the child spontaneously maintain or initiate eye contact? If infrequent, in what situations does it occur?
12. Does the child have strong reactions or fears to any objects, activities or materials?
13. Is the child aware of common dangers?

Table 3 (continued)

B. Language:

1. Does the child initiate a conversation with an adult?
2. Does the child initiate a conversation with peers?
3. Does the child spontaneously ask for help or for an item desired without the adult asking a question?
4. Can the child follow directions in the classroom when he knows the expectations and routines?
5. Can the child follow unfamiliar one- or two-step directions with no extra cues?
6. Do gestures, context, or visual cues aid in the child's comprehension? Does the child respond to common gestures for "come," points, or head nods? Does he/she respond to facial expressions?
7. Can the child combine words in different ways, or does he always use the same phrases?
8. Does the child engage in jargon or echolalia? When does it occur? Does it occur when somebody asks him/her a question? Does it occur when he/she's engaged in play or during a group activity?
9. Will the child ask questions and if so, for what purpose? Are the questions repetitive and stereotypic? Are the questions limited to requesting items or actions he/she desires, or does the child ask out of curiosity or request information beyond his own experience?
10. For what types of interactions will the child spontaneously use language? Does he point out things to other people and want to share them with them? Does he relate past experience and if so, how often and with what level of detail?
11. Does the child frequently seem confused by questions and incorrectly reply?
12. What is the average length of his phrases?
13. If the child has a limited expressive vocabulary (either verbal or sign), how does he communicate his needs?
14. Does the child use yes and no in a meaningful, accurate manner?
15. Does the child reverse or confuse pronouns?
16. If the child is verbal, are the words intelligible?

Table 3 (continued)

C. School Behaviors:

1. Can the child independently remain seated for a group activity, i.e., snack or other lessons?
2. When asked to do something or come to work, does the child independently respond?
3. Does the child attend to group activities that he can participate in?
4. Is the child's participation and performance in group activities as high as it is in one-to-one or small group instruction?
5. What is the average length of time the child can work in a one-to-one instructional situation?
6. Does the child have temper tantrums, destroy property, or become aggressive? If so, when does this occur and how frequently?
7. Does the child get upset when activities or materials are changed? (If the classroom routine gets rearranged or something is delayed such as the bus?)
8. What is the child's behavior like in new and unfamiliar situations, i.e., field trips?
9. What type of reinforcement is effective in maintaining appropriate behavior?

D. Cognitive Skills:

1. Once the child learns a skill, does he retain it?
2. Is the child's performance consistent from day to day?
3. Once the child learns a skill with one person, is he able to demonstrate that skill with another person using the same materials?
4. Once a child learns a skill with one set of materials, can he demonstrate the same skill in the same format with other materials?
5. What type of skills does the child learn most rapidly?
6. When the child learns a skill, can he/she apply it to a situation where it should be used?
7. Is the child's skill profile even across all areas, or does it show peaks and valleys in performance? What are the areas of strengths and the areas of weaknesses?

Table 3 (continued)

E. Self-Help Skill:

1. Can and does the child dress himself/herself at the proper time?
If not, specify what articles he/she needs help with and the degree of help needed.
 2. Is the child totally independent in toileting? If not, specify the degree to which supervision is necessary.
 3. Does the child wash and dry his/her hands independently?
 4. Does the child brush his/her teeth independently?
 5. Is the child aware of dangers?
-

Step 2. Standardized Evaluation

The second step of the assessment process is an in-depth evaluation of the child's ability and achievement levels, utilizing standardized tests administered in individual testing sessions.

Each child receives a psychological evaluation, including tests of intelligence, achievement tests (academic or pre-academic skills), language assessments, and if warranted an evaluation of motor skills. The goals are to identify skills the child can do in the best circumstances and to draw inferences about what he/she cannot do consistently (Lord & O'Neill, 1980). Hypotheses are then developed concerning the child's strengths, weaknesses, skill pattern, and techniques that may promote more efficient learning.

The testing situation regardless of the type of test can be conceptualized as a "standardized observation" of the child's responses to different materials, where the behaviors exhibited are as important as the demonstration of skills. When used as an observation of the child's behaviors and skills, the examiner can: (1) record the child's reactions to different types of materials, tasks, and levels of difficulty; (2) observe the child's response to frustration, length and quality of attention, persistence, problem-solving strategies, speed and response, impulsivity, purposeful task completion, and self-correction. Areas to observe during testing include:

1. Generalization: To identify any discrepancies between the child's test performance and information gained from parents and teachers. Does the child demonstrate the skill with one task but not with another one that is similar?
2. Skill Pattern: To identify the child's strengths and weaknesses across skills and within each skill area, and to observe the ways the child uses the stronger skills to compensate for weaker ones.
3. Motivation: To identify the type of reinforcement (consumable, object, or social) and the frequency needed (continuous, fixed ratio, or intermittent schedule) to maximize cooperation and performance, while considering type of task and difficulty level.
4. Social Skills: To identify the types of social interactions the child initiates and responds to, to observe the range and appropriateness of his/her affect, and to observe the way in which the child uses test materials and play toys.
5. Behavior: To identify the type, frequency, and antecedents of maladaptive or interfering behavior the child displays, and to use this information to develop an hypothesis concerning causation. To evaluate environmental factors (sitting arrangement, noise levels, length of session) and management techniques that increase appropriate behavior.

6. Language: To identify the quality of expressive language the child uses, whether it is spontaneous or needs to be elicited, and any unusual features such as echolalia, perseveration, pronoun reversal, and rate or fluency problems. To observe the child's understanding of language, including the complexity of verbal directions that can be followed and the type of cues that facilitate comprehension.

Standardized norm reference tests yield a score comparing the child's performance with other children at the same chronological age. This provides an indicator of the severity of the handicap, and is useful in establishing long-term expectations of the child. The data gleaned from these tests helps to determine objectives and the type of programs that can meet these expectations or goals. It may help to determine whether a child's program should emphasize functional or academic skills. This information is crucial in order to set the appropriate programming level and to avoid a common error of programming at too advanced a level. Programming that is too difficult may result in teacher and child frustration and antagonism, or conflict with parents due to uneven or slow progress. When tests are explained so that parents understand their purpose, the skills tested, and the predictive value of the tests, the parents' understanding of their child's handicap can be enhanced.

The actual task of testing this population frequently can be difficult. One of the hardest tasks for the examiner is to differentiate between a child's inability to perform a task due to not knowing the skill versus choosing not to perform a task he can complete. Tests are constructed so that the tasks and materials are motivating for the population for which the test was originally designed. Most tests used were designed for non-handicapped children, and the autistic child may not find the materials or the tasks interesting or motivating. Motivating the autistic child is often a challenge for the examiner and frequently needs to be enhanced by additional techniques. Another problem frequently encountered in testing this population is inappropriate and maladaptive behavior. Behavioral techniques are recommended to both increase motivation and decrease behavior problems.

These techniques, especially that of positive reinforcement, are used to increase the flexibility of the testing session and improve cooperation of the child (Freeman, 1976). The approach helps to increase motivation and independent responding, without inflating the results, and aids in assessing which conditions foster learning and improve performance. Reinforcement techniques also help to control some of the disruptive, maladaptive behaviors which may be interfering with the child's performance. Reinforcement is not used contingent on the child giving the correct response, but rather as a consequence for independent and more appropriate responding. It can be used on a continuous, fixed ratio, or intermittent schedule, depending on the child. It is important to remember that no reinforcer is effective with all children. Some children spit out M & M's, others dislike tickles and hugs; some children have fairly strange likes, such as dried macaroni, tapping a spoon, or a "blow" on the back of the neck. For some children, especially young children who have not yet entered a school program or who are severely retarded, reinforcement with consumables or a favorite toy may add problems to the testing situation.

The food or the toy may be too distracting, increasing disruptive behavior and shortening attention.

Behaviors that are the hardest to contain during a testing session are tantrums, aggression, or self-abuse that occurs when a demand is made, or children who have difficulty with change, including minor changes with tasks and materials. A few ways to help deal with these and other behavior problems are:

1. Positioning the table so the child cannot get out of his/her seat.
2. Putting the material in a place where the child cannot reach it, such as on the floor or on the chair next to the examiner.
3. Restraining (holding) one of the child's hands if self-stimulation or throwing of materials is occurring at a high frequency.

The child should be the guide in determining the length of each testing session. It is advisable to use several short testing sessions while the child's behavior is under good control, rather than trying (as is natural and seemingly more efficient) to extend the session, as this may result in a decline in the child's behavior and cooperation.

When choosing a standardized test, it is important to select an instrument that will elicit the child's skills, however low they may be. The most useful variable to consider in test selection then is a child's functioning level, not his/her chronological age. Thus, an examiner needs to have some information concerning the child's background and adaptive skills before a test can be selected that will yield meaningful, helpful data, and elicit the child's skills; this is one of the reasons a standardized testing is not the first step in the assessment process but the second step.

A. Psychological Tests

The use of intelligence tests continues to be controversial with autistic and severely handicapped children. The focus of the debate has changed over the past 35 years, and "testability" no longer is an issue. The present criticisms center on the following issues:

- Intelligence tests are not prescriptive measures; they provide little information to teachers about the child's skills and are not helpful in choosing a point to start programming (Flaherty, 1976).
- Intelligence testing occurs in artificial conditions (Newsom & Rincover, 1981) and is based on the assumption, which may not hold for this population, that it is possible to devise artificial situations to test skills which are similar to real life situations (Gould, 1976).
- The type of score resulting from these tests is confusing, due to the wide "scatter" in skills exhibited; for example, an autistic

child receiving an I.Q. score of 50 will have different skills and educational needs than a Down's Syndrome child with the same I.Q. (Gould, 1976).

- Intelligence tests do not provide information about the conditions responsible for the development or maintenance of the child's inappropriate behavior(s) (Bijou & Peterson, 1971).
- Intelligence tests do not test the same skills at different age ranges, and most tests are beneficial for only a narrow age range (Gould, 1976).
- Intelligence tests are inadequate to use alone (Flaharty, 1976).

From the opposite perspective, reasons cited for using intelligence tests include using the testing situation as an informal observation (Gould, 1976) and as a situation where consistent and continuous demands are made on a child. Such a test yields a quantitative measure showing the degree to which an individual autistic child is different from normal peers, and allows for comparisons between children. Many clinicians feel that it provides an opportunity to look at specific skills in detail, and to elicit the child's pattern of strengths and weaknesses (Magrab, 1976). Most researchers, regardless of their viewpoints, acknowledge the administrative reasons for the continued use of intelligence tests, such as legal mandates by state law or agency requirement. It is also generally accepted by both opponents and advocates (and is the view taken by this author) that intelligence tests should not be the sole measure of an evaluation, since they lack sufficient scope and detail for program planning; rather, a multiple source data base is necessary for a meaningful evaluation.

Two issues that impact on the use of such cognitive measures are examiner expertise and test selection, and the latter has already been discussed. An examiner inexperienced with the population may be unable to elicit the skills the child has, or to set up the testing environment where the child exhibits his/her skills. The same test administered by an experienced examiner will yield information that is both reliable and useful. An examiner should be familiar with a variety of measures in order to select the one most suitable, since most tests are appropriate for a limited age or functioning range.

The following discussion will focus on the small number of instruments that have been useful in measuring the autistic child's ability and in planning programs.

The one test useful for a large age and functioning range is the Leiter International Performance Scale. Advantages of this test for the autistic population are that no expressive language skills are needed, and receptive language skills can be extremely limited, since the directions can be modeled or pantomimed and each task in the test uses the same format. Another plus is that the first item is considered a learning-to-learn task. The one prerequisite skill is the ability to match two dimensional images by internal configuration.

Other intelligence tests frequently used with autistic children listed in increasing difficulty are:*

Bayley Scales of Infant Development: This test is recommended for very young or very low functioning children. If the child is ten years old or older and their skills can only be measured with this instrument, adaptive behavior measures would be more informative.

Merrill-Palmer Scale of Mental Tests: A good test to use with autistic children, it is best for children functioning between 24 and 63 months. It has the advantages of being predominantly performance based, employing a variety of different types of tasks, and is flexible in its administration procedures.

Other Intelligence Tests: If the child is higher functioning and has some useful language, then the Stanford-Binet or the Wechsler tests, the Wechsler PreSchool and Primary Scale of Intelligence (WPPSI) and the Wechsler Intelligence Scale for Children-Revised (WISC-R), can be administered. The Wechsler tests are preferable due to their two-scale construction. In both, their Performance Scale subtests contribute to the Full Scale I.Q. throughout the test range. The Performance Scale does not require any verbal responses, but does require considerable receptive language skills for some sections. The Stanford-Binet is more heavily verbally loaded, and as the age levels increase, the number of performance items decrease. These tests are recommended to be used only with the small group of autistic who are not retarded, and who have both fairly good receptive language skills and some meaningful expressive language.

B. Tests Designed Specifically for Children with Autism

Due to the unique cluster of problems manifested by autistic children and the difficulty in using tests designed for normal or less handicapped children, some clinicians have advocated the use of instruments designed specifically for the autistic child (Ritvo & Freeman, 1977; Flaharty, 1976; Schopler, 1979; Krug, 1979). In the past ten years, a small number of instruments have been specifically designed for this population, such as the Psycho-Educational Profile (PEP), the Autism Screening Instrument for Educational Planning (ASIEP), and the Evaluation and Prescription for Exceptional Children (EPEC). These instruments will differ in purpose, construction, and scoring method. The PEP and EPEC are designed for young children, up to the age of functioning of a six year old, whereas the ASIEP is designed for severely handicapped children of all ages. As the ASIEP and the PEP have been standardized and published, each will be described in detail in the appendix.

At this time, there are no tests designed primarily for older and/or higher functioning children, but some programs are beginning to focus on development of instruments for these subgroups.

*The appendix contains an in-depth description of each test appropriate for this population.

C. Achievement Tests

The two goals of this phase of assessment are determining the child's ability level and his/her achievement level. This information then is used as a baseline or starting point for program planning. Norm referenced or criterion referenced measures are used to evaluate the child's pre-academic and academic skills. Tests are selected as with measures assessing intellectual functioning on the basis of mental age or functioning level rather than chronological age. As has been discussed earlier in this section, the testing situation is also valuable as a standardized observation and provides qualitative information about the child's skills (Salvia & Ysseldyke, 1978).

Most achievement measures can be administered by teachers. It is valuable and efficient to have different professionals with varying backgrounds involved in the assessment process. This helps in determining the validity of the results,* and in comparing observations and behavioral techniques, all of which help in program development.

Achievement measures evaluate fine motor skills, and cognitive concepts and skills, which are the foundation for academic skills, such as imitation, perception (auditory and visual), matching, classification, comparatives, prepositions, colors, shapes, and counting skills. For older and higher functioning children, academic progress in reading, spelling, mathematics, writing skills, and general fund of knowledge is assessed. In addition, the only area that is not traditionally included in achievement batteries, but which is both necessary and recommended for this population, is assessment of vocational skills. This component should be included in the evaluation of all autistic children nine years old or older, except those successfully placed full-time in regular classrooms.

The specific tests or skills assessed depends on the child's age and functioning level. For young and/or children functioning at less than 18 months, developmental measures of adaptive behavior are the most informative instruments to use. One of the most comprehensive measures is the Callier-Azusa (refer to Table 1). For pre-school-aged children, or those up to the age of 12 functioning at 18 months or more, the Developmental Activities Screening Instrument is a good measure which efficiently indicates the child's skill pattern and specific skills. Areas to be identified for programming can then be evaluated in greater detail with the Brigance Inventory of Early Development. This instrument is most useful for children with pre-academic skills above 36 months. Its use as a curriculum guide should be limited to high functioning autistic children who will benefit from a traditional pre-academic and academic instructional sequence. For low functioning children, it is a helpful resource but should be used selectively.

*Note: The results or scores from the Merrill-Palmer, the Psycho-educational Profile, and the Developmental Activities Screening Inventory, appear to correlate at a clinically significant level, when each are administered by a different member of a planning team of different disciplines.

When assessing autistic children with academic skills, it is important for the examiner to be familiar with the specific format used to evaluate each skill. The factors which are helpful to remember when selecting tests to assess academic skills are that: (1) Many higher functioning autistic children are facile in learning certain skills, such as decoding words and counting, or memorizing arithmetic facts, calendars, maps, etc., with little understanding or meaning attached to what they are doing, and are unable to apply the skill in other areas or situations; (2) many autistic children use visual context and cues to aid them in responding, and may achieve spuriously high scores on tests with certain formats. To explain this second point: On some test, such as the Peabody Individual Achievement Test, the test format employs a picture which is described in a sentence with a word missing and the missing word is to be selected from one of several presented visually (multiple choice response). The autistic child will do better on that type of question than if the test uses a fill-in-the-blank format with no picture or word choice, such as Woodcock Reading Mastery Tests requiring the child to think of the appropriate word. The hardest task for the autistic and probably most useful one for assessing reading comprehension is having the child retell a passage they read, or answer verbally presented question such as in the Standard Reading Inventory. Likewise when evaluating a child's skill with arithmetic word problems, it is important to note whether there is a visual reference and the linguistic complexity of the question.

It is recommended that multi-component tests be used to measure reading and arithmetic skills, and each skill be carefully and thoroughly evaluated in order to find the correct instructional level. For autistic children of elementary school age with academic skills, the Standard Reading Inventory, the Key Math, and the general information section of either the Brigance Inventory of Basic Skills or the Peabody Individual Achievement Test are recommended.*

For adolescents, unless they are functioning at or near their chronological age level, there are no specific tests that effectively assess their skills and provide useful age appropriate programming information. There is a dearth of useful standardized measures in this area, but there are a few ways to practically approach this problem. If the autistic teenager has some reading and arithmetic skills, academic achievement tests used with younger elementary-aged children are a helpful starting point, such as those recommended in the previous paragraph. It is also necessary to evaluate the usefulness of the student's academic skills and observe whether they generalize to everyday situations; this can be done by informal assessment. Selected subsections from the Brigance Inventory of Essential Skills and/or skills evaluated on adaptive behavior measures may be helpful in selecting target areas to further assess. Functional and practical applications should be the focus of more in-depth evaluation. Skills which are routinely informally assessed are:

*Since these tests are routinely used with elementary-aged children in regular and special education programs, they will not be discussed further in the appendix. For more information, refer to Assessment in Special and Remedial Education by Salvia and Ysseldyke (1978).

- Use of money
- Calculator use for basic arithmetic processes
- Telling time
- Knowledge of personal information such as name, address, telephone number
- Understanding and reading survival words
- Reading menus and being able to order in a restaurant
- Making a shopping list and recognition of certain packages or words
- Locating items in a newspaper, i.e., movies, TV section, weather, advertisements, etc.

For students with more advanced skills:

- Using catalogs
- Reading and following written direction; e.g., recipes, rules, warnings
- Practical measurement
- Typing

The other area to evaluate for older students is vocational skills. This area presently is beginning to receive much attention. There is one published checklist, the Pre-Vocational Assessment and Curriculum Guide which is useful in assessing the student's readiness for working in a sheltered workshop. Informal assessments and work samples are frequently used to provide additional information.

It is imperative when evaluating the child's school skills that a thorough language evaluation be completed by a qualified professional, including standardized measures and observational data. It is easy to assume with this population that a child's comprehension skills are significantly better than they actually are. This error occurs frequently and usually is based on a number of things: the child looks so alert; the child knows what's asked but he is being oppositional; the child is following directions but by using context cues, such as routine voice tone, or gestures. Appreciation of the actual level of the child's comprehension of auditory information is a crucial element in the selection of appropriate learning objectives and instructional techniques. Variables such as quantity of expressive language, level of comprehension, age, and intelligence should be considered in determining the appropriateness of a measure (please refer to the chapter by McLean and McLean for further information).

D. Summary

In the Appendix, Test Summaries, there are detailed descriptions of the standardized tests most valuable for the assessment of autistic children. Tests which are useful, such as the WISC-R or Key Math, but which are commonly used with other populations are not discussed. Due to the great variability in both intelligence and achievement for this population, no standard test battery can be recommended, not even at specified age ranges. By following the assessment process outlined in this chapter and the guidelines discussed on the use of standardized tests, the problems inherent in testing autistic children in the selection of appropriate tests hopefully will be avoided.

For a more thorough and complete discussion of language assessment, please refer to the chapter by McLean and McLean. In addition, if the child is quite young or severely impaired, an occupational therapist should be included in the evaluation, in order to comprehensively assess the child's gross and fine motor skills.

Step 3. Data Interpretation and Integration

The gathering of data is straightforward compared to the difficult task of interpretation and integration. The purpose of the third and last part of this phase of assessment consists of integrating and assembling the information into a meaningful picture of the child's skills and behaviors. It is a point in the process for all the involved parties to meet, to review and analyze the results, and to develop long-term goals. The worksheet (Table 4) is a convenient way to summarize the data collected.

Depending on the referral concerns and purposes for the evaluation, this meeting may serve different functions. If the referral concern was solely placement, it would take the form of a placement staffing. Once goals are established, there is sufficient information to knowledgeably make a placement decision. Ending the process at this point is not recommended, but frequently does occur. Assessment which results only in placement is not useful, effective, or efficient. It has not gone far enough, and potentially useful information is wasted. Assessment as it has been discussed and described here needs a strong prescriptive component: The information gathered must be made useful to professionals working directly with the child. More than a list of test scores of a survey of skills is needed to develop objectives and interventions, the goal of this process. At this point, the recommended purpose for the team assembling is to discuss the implications of their findings and use this data to develop long-term objectives.

Long-Term Goals

Long-term goals are developed by the assessment team from the child's current skills and his anticipated long-term needs at home and school. These needs are derived from:

1. child characteristics including age, maladaptive behavior, intellectual ability, functioning level, and communication skills; and
2. an "educated guess" concerning the child's probable adult living situation.

Goals are based on the anticipated degree of independence the child could likely achieve as an adult, and the skills necessary to attain that functioning level. Some examples:

It is anticipated Joe will live in a group home and work in a sheltered workshop. A prerequisite for both situations is for behavior to be under verbal control. Presently, Joe needs occasional physical intervention and management of his aggressive and non-compliant behavior. A good goal for Joe would be

Table 4

Assessment Summary Worksheet

Name: _____ Date of Assessment: _____
 Birthdate: _____ Age: _____

PART I.

A. Referral Concerns: _____

B. Adaptive Behavior:
 1. Source of Information: _____
 2. Instruments: _____

	Independent Skills	Emerging Skills
Area: _____		
Results: _____		
Area: _____		
Results: _____		
Area: _____		
Results: _____		
Area: _____		
Results: _____		
Area: _____		
Results: _____		

C. Behavioral Checklists:
 1. Source of Information: _____
 2. Instrument(s): _____
 3. Results: _____

D. Informal Assessment:
 1. Play and Social Skills:
 2. Language:
 3. School Behaviors:
 4. Learning Characteristics:

Table 4 (continued)

PART II.

A. Psychological Testing:

1. Instrument: _____ Score: _____

Behavioral Observation:

Skills Demonstrated:

B. Educational Testing:

1. Instrument: _____ Score: _____

Behavioral Observation:

Skills Demonstrated:

Emerging Skills:

2. Instrument: _____ Score: _____

Behavioral Observation:

Skills Demonstrated:

Emerging Skills:

C. Language Testing:

PART III.

SUMMARY:

A. Strengths:

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.

Weaknesses:

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.

B. Learning Strategies:

C. Behavior Management:

Table 4 (continued)

D. Functioning Level(s):

E. Long-Term Objectives:

F. Placement:

Phase II Planning:

A. Additional Information to be gathered:

1. Area or Behavior _____ Proposed Method: _____

2. Area or Behavior _____ Proposed Method: _____

to decrease the negative behavior and fade the physical management to an equally but less intrusive verbal management system.

Tina is a high-functioning autistic pre-school child. Given her ability level and present skills, it is hypothesized that she may be able to live independently as an adult. Her aloofness and inappropriate peer interactions are a major concern and will affect her later adjustment. A goal for Tina would be to increase appropriate peer interaction when initiated by another child in unstructured situations.

Goals should be obtainable within a year. It is acknowledged that progress for many autistic children is slow, but goals should not be so vague as to be applicable for the child's entire school career. General goals can easily be written without going through this comprehensive process. For a goal to be useful, it needs to be sufficiently detailed to be measurable and linked to specific objectives. For example:

Caroline will be schedule trained for toileting and will use the toilet when verbally prompted.

Jose will learn to read cooking words and will use them to read and follow recipes.

Once long-term goals are formulated, this phase of assessment is completed. The next step is the development of the child's program.

PHASE II. PROGRAM DEVELOPMENT

The purpose of the second phase of the assessment process is the development of an individualized educational plan, based on the gathered information and established long-term goals. The rationale for this sequence has been explained, but to summarize: the first phase of the process provides the foundation for formulating the program, and is used and built upon during the second phase. Program development, implementation, and monitoring are intertwined in this part of the process. Traditionally, after a child receives a comprehensive evaluation, the teacher receives a detailed report of the test results with a few sentences devoted to recommendations, which are generally vague. This is neither the type of report nor the sort of recommendations advocated in this process. The purpose here is to design specific recommendations detailing teaching techniques, objectives, rationales, contexts, activities, and criteria for achievement. This phase is less structured and is individually tailored to the child's specific needs.

Step 1. In-Depth Evaluations

The purpose of this step is the acquisition of additional information to aid in the designing of short-term objectives and interventions to operationalize the long-term goals. The process varies with the child's functioning level, problematic behaviors, age, and questions remaining from the first phase of assessment. Generally, during this step specific skills and/or behaviors are assessed in detail and over time. Many professionals, regardless of their area of expertise, advocate evaluating

the child for two to four weeks (Dubose, 1977; Wing, 1976) under actual learning conditions (Heiss, 1977). It is believed that the greater the similarity between the assessment situation and the teaching situation, more likely it is that the recommendations will be on target. Usually, it is not efficient or necessary for all areas to be looked at this closely. It is more pragmatic to analyze in detail only the areas or behaviors where there is insufficient data to confidently design feasible short-term objectives and facilitating interventions. The following two examples illustrate situations where an extended assessment is warranted:

1. From the information gathered during Phase I, it is known that Marilyn is self-abusive and bites her hand frequently at home, in school, and during testing. The frequency of the behavior, factors that affect it, or previously used interventions are not known. Before developing an intervention which has a chance of working, these questions must be answered.
2. A teacher is stymied by the lack of progress Simon has made on a specific skill, and many approaches have been tried and documented with no success. From testing, it has been found that Simon has the prerequisite skills, and the team feels the goal is appropriate. The likelihood a recommended procedure will work is slim unless some trial or prescriptive teaching has been tried and begins to succeed.

Many different techniques are employed, depending on the skill or the behavior to be studied. Due to the variety of possible techniques, this section will make no attempt to be comprehensive. Instead, it will briefly discuss some methods commonly used with this population. Regardless of the techniques chosen, the purpose is the same, to gather data useful for programming.

A. Functional Analysis of Behavior

Standardized tests receive much criticism because they only survey skills and do not identify the conditions responsible for the development and maintenance of problem behavior (Newson & Rincover, 1981; Bijou & Peterson, 1971). Many autistic children have a repertoire of inappropriate or negative behavior, and the variables controlling this behavior need to be evaluated. A useful approach is derived from functional analysis of behavior, where the behavior, the stimulus, and the consequences are identified. These variables plus information concerning frequency, intensity and duration are important for understanding the behavior and developing a procedure to use to change it. A simple format to use to collect this information is:

Name: _____ Age: _____

Behavior: _____ (defined in measurable and observable terms)

Date	Time	Antecedent/Stimulus	Response/Behavior	Consequence

By analyzing behavior in this manner, the pattern of behavior is identified. Often the "cause" of the variable(s) responsible for maintaining it are also found.* This information can then be used to design an intervention to break this pattern and hopefully change the behavior.

B. Conditions for Learning

Many educators feel the best way to determine how a child learns is to observe the child's performance on a series of learning tasks. For the same reason, there is some agreement that the most helpful individualized instruction is planned only after a period of diagnostic perspective teaching. Depending on one's orientation, this type of approach is to identify the discrepancy between the initial performance of the child and his performance after the task has been altered.

Information is gained on the optimal strategy to use with a child. It also provides information on the competencies the child actually has if the task is presented in a manner which draws on their preferred learning style (Smith, 1979).

A learning potential assessment is used to judge whether the child is able to perform a task following training, rather than on a single test or item performance. Often this type of assessment is helpful with young children who have not received prior programming, children who have received poor and inappropriate instruction, and children whose progress has been significantly below expected levels. This type of evaluation provides information on the child's learning rate under appropriate instructional conditions.

In the section on educational assessment, the lack of appropriate test instruments for assessing adolescents was mentioned. The recommended procedure to use in assessing an adolescent's pre-vocational and vocational skills is with a work or job sample. This is a simulated representation of work tasks or activities which may or may not represent an actual job or component of a job (Sitlington, 1979). There are two major parts to work sample assessments. During the first part, the student learns the requisite skills and concepts necessary for the task performance. The speed, quality, and detail of the performance are evaluated during the second part, the production phase which occurs after the student has learned the task. In most vocational programs, assessment and training are meshed, and the recommended way to assess the student is via training.

C. Task Analysis

The previous group of procedures focused on how the child best learned, and this procedure looks at which skill or step the child should be taught. Generally, task analysis refers to any method which provides additional diagnostic information leading to the design of appropriate teaching methods. More specifically, the process of analyzing a skill or sequence into its component parts also is referred to as task analysis

*For more detailed information on functional analysis of behavior, please refer to the chapter by Simpson or to the text on behavioral interventions or management.

and is how the term will be used here. Skills can be broken into a sequence of steps to help the learner acquire the task. This can be done to fit the individual child's idiosyncratic learning style, or more efficiently by referring to published skill sequences.* When using a published sequence, it may be necessary to adapt it for a specific child, but it usually provides a good starting point.

Using information acquired in Phase I, Step 1, about the child's adaptive behavior, specific skills which have not been mastered should now be carefully studied using this method. For example, if it is known that Richard can put on his own pants, socks and shoes, but not his shirt, then this last skill should be taught after it has been task-analyzed. By observing Richard, it was found he could pull his shirt over his head, but he didn't know how to proceed from there. The teacher referred to a skill sequence and found the next step was putting one arm into the sleeve when the sleeve was extended. This is the point where instruction would begin for Richard.

Depending on the child's functioning level and age, this would be either the complete short-term goal, or the goal would be for him to independently put on his shirt when it is given to him. This useful technique is easily applied to the teaching of functional skills, such as self-help skills, home living skills, and vocational skills. An advantage is that it doesn't require the child to have all the prerequisite skills, and it disregards developmental hierarchies. Another beneficial feature of this procedure is that it provides a way for the child to be taught new skills with a minimum of failure, by teaching the task in a slow, organized, step-by-step fashion.

D. Observations

Extensive observations are recommended for some specific situations. It has been noted that low functioning children are quite variable in their performance. This characteristic often is not reflected on either standardized tests or developmental sequences (Dubose, 1977). In order to establish realistic levels for achievement criteria, this information is important, as the child may otherwise be retained on a skill that he/she has essentially mastered.

Observations are especially valuable for determining appropriate goals in the area of social skills. Due to the dearth of useful assessment instruments in this skill area, the child's present skill repertoire needs to be systematically observed. This will provide data for establishing goals and intervention at the correct level that will have a chance of generalizing.

Observations are also useful for other purposes, such as providing data on maladaptive behavior.

*Some of the adaptive behavior instruments on Table 1 contain task-analyzed skill sequences. If it mentions in the table that the instrument is good for programming, it is implied that the tool contains task-analyzed sequences.

In order to insure the usefulness of observational data, a goal should be determined and a standard code of procedure followed in the gathering of this information. This caution is recommended because of the large amount of time and personnel needed to collect this information.

The four methods are useful in gathering relevant detailed information, and in the development of short-term goals and interventions. There are many ways each of these procedures can be used; the short descriptions were intended to indicate some systematic procedures which can be employed.

Step 2. Program Development.

The goal of the entire process is the development of the child's individualized educational program. In the step already discussed, all the necessary information has been collected and synthesized. A structure and direction has been provided by the formulation of the long-term goals and implementation strategies.

Even with structure and direction provided, a common question at this time is which short-term goals should be selected. In the past, isolated skills or behaviors were frequently taught, and these often had little relationship to one another or to the stated long-term goals. The issue of generalization was rarely addressed, and it was assumed to occur, though in practice it was infrequently achieved. Some issues to consider in selecting short-term goals are: number of goals to be worked on at any one time, areas which need to be prioritized, and criteria for achievement.

Many autistic children have so many programming needs that there are not sufficient hours in the school day to work on all the necessary goals. If this occurs, the professionals involved in assessment, the teacher, and the parents must prioritize and decide which skills should be taught. A helpful guide which has been discussed in the determination of long-term goals is the selection of skills which will increase the independent functioning of the child in as many real life situations as possible. The degree of independence that is hoped the child will attain is considered, as well as more immediate needs in his/her current home and school situations.

Another common concern is whether the child's more advanced skills should be increased or whether the program should emphasize the remediation of the lower skills. By conceptualizing the issue as an either/or question, skills are often increased without considering their usefulness. A better way to approach this issue is to expand skills to become useful. With this population, it is comparatively easy to increase quantity of skills a child knows. The real challenge is to increase the usefulness of skills already acquired, and for the child to know where and when to use them. Depending on the child and his/her characteristics, a number of different strategies can be used, such as using a stronger skill to aid a weaker one, focusing on the weaker area, and expanding the number of situations where an already acquired response can be used.

A related issue is the use of criteria to determine when a child has learned a skill. A frequently used criteria for specifying skill mastery with severely handicapped children is if the learner can perform the skill in three different naturally occurring settings, with three different sets of materials and three different people. Use of this rigorous definition supports the selection of goals that help increase the breadth of a skill rather than the number of skills. By conceiving mastery in this way, skill use and generalization is not left to chance.

In the designing of the child's program, the issues just discussed should be considered. It is also recommended that each new goal should contain: (1) the behavior the child is to learn; (2) the context or situation where it is to occur; (3) the level of independence with which the skill is to be performed; and (4) the criteria necessary for achievement. Activities can then be designed to achieve these goals that consider the child's most efficient mode of learning, the materials to maximize generalization, the structure to increase the child's performance, and the necessary level of reinforcement to improve motivation and instructional control. If short-term goals have been carefully chosen, taking into account the child's learning rate and skill repertoire, they should be reached within six months.

The development of the child's program is the link between assessment and curriculum. The two roles are intertwined and neither occurs in isolation. It is not the purpose of this chapter to discuss the concerns of curriculum, activities, materials and structures to use, as these will be discussed in the chapter on curriculum and programming. The aim has been to illustrate a process which will result in a well-conceived program based on a child's unique needs.

Step 3. Program Monitoring

The process of assessment is continuous and theoretically never ends. Practically, once a program is developed, the bulk of the work for the assessment team has been completed for a while, and the focus shifts to the professionals implementing the program. Regardless of how carefully the program has been developed or how well it fits the present needs of the child, some adjustment and change will be needed. Children, professionals, and environments change, and these changes impact on the goals and techniques recommended. Evaluation and monitoring must be an on-going process if the teacher is to understand the impact of the learning experience on the child.

Program monitoring and evaluation takes a number of different forms. Federal Law PL 94-142 includes annual reviews and three-year re-evaluations in its recommended guidelines. These two procedures by themselves are not sufficient to keep the child's program finely tuned, as the intervals are too long. Review and re-evaluation needs to be done at regular, shorter intervals by the team of professionals working directly with the child, to insure that progress occurs. As the child achieves short-term goals, the program needs to be amended and new goals specified. If the child does not reach a goal within a reasonable or expected time period, changes in either the goal or intervention are necessary.

The aim of the annual review is to carefully examine the continual appropriateness and direction of the programming. Long-term goals should be updated and new ones established for the following year. Additional in-depth assessment of troublesome areas is useful, and the readministration of educational tests, behavior checklists, or adaptive measures is sometimes beneficial.

The three-year re-evaluation is the time for a comprehensive re-examination of the child's skills and his/her program. Data again needs to be gathered in order to carefully review the direction of the program, long-term goals, short-term goals, and interventions. Some researchers advocate the use of a standardized battery for studying student growth. They feel that the evaluation of the student and program data is meaningless unless the data compared is from the same test instrument, used in the same manner, at each test interval (Krug et al., 1981). This may be warranted for research, but it is not practical in most other settings. Realistically, if the tests previously used are still appropriate for the child, it is advantageous for them to be re-administered. Many of the recommended tests have a limited age range, so for older elementary-aged students and adolescents many of the tests are not suitable. Regardless of whether the same battery is given again or other tests and measures are used, the purpose is the same: to thoroughly examine the child's progress over the time period reviewed, and to compare this information with the original hypothesis on later adult functioning. Depending on the information gained, the child's program will need to be adjusted. This process then continues in a cyclical manner throughout the child's school career.

CONCLUSION

This chapter has discussed issues and problems occurring in the assessment of autistic children. A method to structure this difficult process has been presented, and recommended methods and instruments have been discussed. A goal has been to explain the rationale for this comprehensive process, and to provide a method to integrate and apply the information gathered. Application of these approaches should result in well-designed individualized education plans based on a thorough understanding of the children's skills, abilities, and learning styles.

REFERENCES

- Alpern, G. D. Measurement of "untestable" autistic children. Journal of Abnormal Psychology, 1967, 72, 478-486.
- Arthur, G. The Arthur adaption of the Leiter International Performance Scale. Journal of Clinical Psychology, 1949, 5, 345-349.
- Balthazar, E. E. Balthazar Scales of Adaptive Behavior. Palo Alto, California: Consulting Psychologists Press, 1973.
- Bayley, N. The Bayley Scales of Infant Development. New York: Psychological Corporation, 1969.
- Bijou, S. W., & Peterson, R. F. Functional analysis in the assessment of children. In P. McReynolds (Ed.), Advances in psychological assessment, Vol. 2. Palo Alto, California: Science and Behavior Book Inc., 1971.
- Brigance, A. Inventory of early development. North Billerica, Mass.: Curriculum Associates Inc., 1978.
- Budoff, M., & Hamilton, J. L. Optimizing test performance of moderately and severely mentally retarded adolescents and adults. American Journal of Mental Deficiency, 1976, 81(1), 49-57.
- Connolly, A., Nachtman, W., & Pritchett, E. Manual for the Key Math Diagnostic Arithmetic Test. Circle Pines, MN: American Guidance Service, 1971.
- Coulter, W. A., & Morrow, H. W. A contemporary conception of adaptive behavior within the scope of psychological assessment. In W. A. Coulter and H. Morrow (Eds.), Adaptive behavior: Concepts and measurement. New York: Grune and Stratton, 1978(a).
- Coulter, W. A., & Morrow, H. W. A collection of adaptive behavior measures. In W. A. Coulter and H. W. Morrow (Eds.), Adaptive behavior: Concepts and measurements. New York: Grune and Stratton, 1978(b).
- Creak, M. Schizophrenia syndrome in childhood: Progress report of a working party. Cerebral Palsy Bulletin, 1961, 3, 501-504.
- DeMyer, M. Nature of the neuropsychological disability in autistic children. Journal of Autism and Childhood Schizophrenia, 1975, 5(2), 109-127.
- DeMyer, M. Motor perceptual-motor and intellectual disabilities of autistic children. In L. Wing (Ed.), Early childhood autism. Elmsford, NY: Pergamon Press, 1976.
- DeMyer, M. K., Barton, S., Alpern, G., Kimberlin, C., Allen, J., Yang, E., & Steele, R. The measured intelligence of autistic children. Journal of Autism and Childhood Schizophrenia, 1974, 4(1), 42-60.

- DeMyer, M. K., Barton, S., & Norton, J. A. A comparison of adaptive, verbal and motor profiles of psychotic and non-psychotic subnormal children. Journal of Autism and Childhood Schizophrenia, 1972, 2(4), 359-377.
- DeMyer, M., Churchill, D., Pontious, W., & Gilkey, K. A comparison of five diagnostic systems for childhood schizophrenia and infantile autism. Journal of Autism and Childhood Schizophrenia, 1971, 1, 175-180.
- Doll, E. A. Vineland Social Maturity Scale. Circle Pines, MN: American Guidance Service, 1965.
- Doll, E. A. Preschool Attainment Record. Circle Pines, MN: American Guidance Service, 1966.
- Dollar, S. J., & Brooks, C. Assessment of severely and profoundly handicapped individuals. Exceptional Education Quarterly, 1980, pp. 87-101.
- DuBose, R. F., Langley, M. B., & Stagg, V. Assessing severely handicapped children. Focus on Exceptional Children, 1977, 9(7).
- Dunn, L. M., & Markwardt, F. C. Peabody Individual Achievement Test. Circle Pines, MN: American Guidance Service, 1970.
- Flaharty, R. EPEC: Evaluation and prescription for exceptional children. In E. R. Ritvo, B. J. Freeman, E. M. Ornitz and P. E. Tanguay (Eds.), Autism: Diagnosis, current research and management. New York: Spectrum Publications, Inc., 1976.
- Forcade, M. C., Matey, C. M., & Barnett, D. W. Procedural guidelines for low incidence assessment. School Psychology Digest, 1979, 8(3), 248-257.
- Foster, K. Camelot Behavioral Checklist. Bellevue, Wash.: Edmark Associates, 1974.
- Freeman, B. J. Evaluating autistic children. Journal of Pediatric Psychology, 1976, 1(3), 18-21.
- Freeman, B. J., & Ritvo, E. R. Cognitive assessment. In E. R. Ritvo, B. J. Freeman, E. M. Ornitz and P. E. Tanguay (Eds.), Autism: Diagnosis, current research and management. New York: Spectrum Publications, Inc., 1976.
- Freeman, B. J., Ritvo, E. R., Guthrie, D., Schroth, P., & Ball, J. The behavior observation scales for autism: Initial methodology, data analysis and preliminary findings on 89 children. Journal of the American Academy of Child Psychiatry, 1978, 17, 576-533.
- Freeman, B. J., Schroth, P., Ritvo, E., Guthrie, G., & Wake, L. The Behavior Observation Scale for autism (BOS): Initial results for factor analysis. Journal of Autism and Developmental Disorders, 1980, 10(3), 343-346.

- Gould, J. Assessment: The role of the psychologist. In M. P. Everard, An approach to teaching autistic children. Elmsford, New York: Pergamon Press, 1976.
- Gould, J. The use of the Vineland Social Maturity Scale, the Merrill-Palmer Scale of Mental Tests (non-verbal items) and the Reynell Developmental Language Scales with children in contact with the services for severe mental retardation. Journal of Mental Deficiency, 1978, 21, 213-225.
- Heiss, W. Relating educational assessment to instructional planning. Focus on Exceptional Children, 1977, 9(1).
- Hermelian, B., & O'Connor N. Psychological experiments with autistic children. Oxford: Pergamon Press, 1970.
- Holovka, E. A., & Domsic, M. E. Muskegon Index of Autistic Behavior. Muskegon: Area Intermediate School District, 1976.
- Jobes, N. K., & Hawthorne, L. W. Informal assessment for the classroom. Focus on Exceptional Children, 1977, 9(2).
- Johnston, R. B., & Magiab, R. R. (Eds.). Developmental disorders: Assessment, treatment, education. Baltimore: University Park Press, 1976.
- Kanner, L. Autistic disturbances of affective contact. Nervous Child, 1943, 2, 217-250.
- Karan, O. C., Bernstein, G. S., Harvey, J., Bates, P., Renzaglia, A., & Rosenthal, D. An extended evaluation model for severely handicapped persons. AAESPH Review, 1979, 4(4), 374-398.
- Koegel, R. L., Egel, A. L., & Dunlap, G. Learning characteristics of autistic children. In W. Sailor, B. Wilcox, and L. Brown (Eds.), Methods of instruction for severely handicapped students. Baltimore: Paul H. Brookes, 1980.
- Krug, A. D., Arick, J. R., & Almond, P. J. Autism screening instrument for educational planning. Portland: ASIEP, Education Company, 1978.
- Krug, D. A., Rosenblum, J. F., Almond, P. J., & Arick, J. A. Autistic and severely handicapped in the classroom: Assessment, behavior, management and communication training. Portland: ASIEP, Educational Company, 1980.
- Leiter, R. G. Leiter International Performance Scale. Chicago: Stoetling Company, 1948.
- Leiter, R. G. Part I of the manual for the 1948 revision of the Leiter International Performance Scale: Evidence of the reliability and validity of the Leiter tests. Psychological Service Center Journal, 1959, 11, 1-72.

- LeMay, D. W., Griffin, P. M., & Sanford, A. R. Learning accomplishment profile. Winston-Salem, NC: Kaplan School Supply Corporation, 1974.
- Lidz, C. S. Issues in the psychological assessment of pre-school children. Journal of School Psychology, 1977, 15(2), 129-135.
- Lidz, C. S. Assessment for development and implementation of the individual education program. School Psychology Review, 1980, 9(3), 297-311.
- Lord, C., & O'Neill, P. A developmental-behavioral model for the prescriptive evaluation of autistic and severely socially impaired children. In A. Thompson and B. Wilcox (Eds.), Critical issues in educating autistic children and youth. Washington, D.C.: U.S. Department of Education, Office of Special Education, 1980.
- McCracken, R. A. Standard Reading Inventory. Klamath Falls, Oregon: Klamath Printing Company, 1966.
- Mithaug, D. E., Mark, D. K., & Stewart, J. E. The Pre-Vocational Assessment and Curriculum Guide. Seattle: Exceptional Education, 1978.
- Mithaug, D., Mark, D., Stewart, J., & McCalmon, D. Assessing pre-vocational competencies of profoundly, severely and moderately retarded persons. Journal of the Association for the Severely Handicapped, 1980, 5(3), 270-284.
- Newsom, C., & Rincover, A. Autism. In E. J. Mash and L. G. Terdal (Eds.), Behavioral assessment of childhood disorders. New York: Gilford Press, 1981.
- Nihara, K., Foster, R., Shellhaas, M., & Leland, H. AAMD Adaptive Behavior Scale. Rev. Ed. Washington, D.C.: American Association on Mental Deficiency, 1975.
- Prior, M. Cognitive abilities and disabilities in infantile autism: A review. Journal of Abnormal Child Psychology, 1979, 7(4), 357-380.
- Public Law 94-142, Education of the Handicapped Act, 1975.
- Rimland, B. The differentiation of childhood psychosis: An analysis of checklists for 2,218 psychotic children. Journal of Autism and Childhood Schizophrenia, 1971, 2, 6.
- Rimland, B. Infantile autism: Status and research. In A. Davids (Ed.), Child personality and psychopathology. Vol. 1. New York: Wiley, 1974.
- Ritvo, E. R., & Freeman, B. J. National society for autistic children: Definition of the syndrome of autism. Journal of Autism and Childhood Schizophrenia, 1978, 8, 162-169.

- Robinson, N. M., & Robinson, H. B. The mentally retarded child. New York: McGraw Hill Book Company, 1976.
- Rutter, M. Behavioral and cognitive characteristics of a series of psychotic children. In L. Wing (Ed.), Early childhood autism. London: Pergamon Press, 1966.
- Rutter, M. The description and classification of infantile autism. Springfield, Ill.: Charles C. Thomas, 1971.
- Rutter, M. Language disorders and infantile autism. In M. Rutter and E. Schopler (Eds.), Autism: A reappraisal of concepts and treatment. New York: Plenum Press, 1978.
- Sailor, W., & Mix, B. The TARC Assessment System. Lawrence, KS: H & H Enterprises, Inc., 1975.
- Salvia, J., & Ysseldyke, J. E. Assessment in special and remedial education. Boston: Houghton Mifflin Company, 1978.
- Sattler, J. M. Assessment of children's intelligence and special abilities. Boston: Allyn and Bacon, Inc., 1982.
- Schopler, E., & Reichler, R. Psychoeducational profile. Baltimore: University Park Press, 1979.
- Schopler, E., Reichler, R. J., DeVellis, R. F., & Daly, K. Toward objective classification of childhood autism: Childhood Autism Rating Scale (CARS). Journal of Autism and Developmental Disorders, 1980, 10(1), 91-103.
- Schopler, E., Reichler, R. J., & Lansing, M. Individual assessment and treatment for autistic and developmentally disabled children. Vol. II. Baltimore: University Park Press, 1980.
- Simeonsson, R. J., Huntington, G. S., & Parse, S. A. Assessment of children with severe handicaps: Multiple problems-multivariate goals. Journal of the Association for the Severely Handicapped, 1980, 5(1), 55-72.
- Sitlington, P. L. Vocational assessment and training of the handicapped. Focus on Exceptional Children, 1979, 12(4).
- Sloan, J. L., & Marcus, L. Some findings on the use of the adaptive behavior scale with autistic children. Journal of Autism and Developmental Disorders, 1981, 11(2).
- Smith, C. Identification of emotionally disabled pupils: An overview. In C. R. Smith and J. Grimes (Eds.), The identification of emotionally disabled pupils: Data and decision making. Des Moines: Iowa Department of Public Instruction, 1979.
- Smith, C. R. Assessment alternative: Non-standardized procedures. School Psychology Review, 1980, 9(1), 46-57.

- Stark, J. A., Baker, D. H., Menousek, P. E., & McGee, J. J. Behavioral programming for severely mentally retarded/behaviorally impaired youth. In K. P. Lynch, W. E. Kiernan and J. A. Stark (Eds.), Pre-vocation and vocational education for special needs youth. Baltimore: Paul Brooks, 1982.
- Stillman, R. (Ed.). The Callier-Azusa Scale. Dallas: University of Texas, Callier Center for Communication Disorders, 1978.
- Stutsman, R. Merrill-Palmer Scale of Mental Tests. New York: Harcourt, Brace and World, 1931.
- Terman, L. M., & Merrill, M. A. Stanford-Binet Intelligence Scale. Manual for the Third Revision (Form L-M). Boston: Houghton Mifflin, 1960.
- Wechsler, D. Manual for the Wechsler Intelligence Scale for Children - Revised. New York: Psychological Corporation, 1974.
- Wilhelm, H., & Lovaas, O. L. Stimulus overselectivity: A common feature in autism and mental retardation. Journal of Autism and Childhood Schizophrenia, 1976, 8(1), 26-31.
- Wing, L. Assessment: The role of the teacher. In M. P. Everard (Ed.), An approach to teaching autistic children. Oxford: Pergamon Press, 1976.
- Woodcock, R. W. Woodcock Reading Mastery Test. Circle Pines, MN: American Guidance Service, 1973.
- Zentner, L. A consideration of the assessment process for handicapped children under five. St. Paul: Minnesota Department of Education, 1978.

APPENDIX

TEST SUMMARIES

Test Name: Leiter International Performance Scale

Author: R. Leiter (1948), G. Arthur Adaptation (1948)

Publisher: Stoelting Company
424 North Horman Avenue
Chicago, IL 60624

Description:

The Leiter International Performance Scale is a non-verbal test of intelligence that can be used to evaluate children with sensory, motor, speech or language deficits. The scale contains 54 tasks and is designed to evaluate abilities from the 2-18-year age level. The majority of items are not timed, and instructions are pantomimed or demonstrated rather than verbally presented. For each task throughout the test, the child is required to select a block bearing the correct picture or symbol and place it in the appropriate recess of a specially designed wooden frame. The test places a heavy emphasis on perceptual organization and discrimination ability.

In 1948, the lower range of the test, covering levels II and XII for ages 3-8 years, was revised by Arthur; this was done because the norms were too high for this age range. The Arthur adaptation uses the same materials and tasks, and the revised scores are included in the manual.

Age Ranges: 2-18 years; Arthur Adaptation: 3-8 years

Type Score: Mental age, and ratio I.Q. Since the norms underestimate a child's intelligence, it is recommended that five points be added to the I.Q. score (Leiter, 1959).

Positive Aspects:

1. A good instrument to use with a variety of handicapped children, especially language impaired populations, who cannot be adequately evaluated with the Stanford-Binet, WISC-R, or WPPSI.
2. It is administered non-verbally, requiring minimal directions and no verbal responses.
3. The first five items measure the "ability to learn" and permit repeated demonstrations and trials.
4. It can be used with a wide age range or functioning range.
5. It is fairly easy to administer, with simple scoring procedures, allowing the examiner to closely observe the child's performance.

6. Most children are easily involved in the task and find the materials easy and interesting to manipulate.

Negative Aspects:

1. The manual fails to adequately describe the standardization sample, or to present reliability data or standard deviations for various age levels.
2. The norms are outdated, and when compared with the WISC and the Stanford-Binet Leiter scores, tend to be five points lower; a bonus system is used to raise the basal score and increase credit, bringing the scores in line with those obtained on these other tests.
3. Due to lack of certain necessary technical characteristics, Salvia and Ysseldyke (1978) feel it is psychometrically inadequate and therefore should not be used as a measure of intelligence.
4. There is uneven item difficulty and a small number of tasks at each age level. Types of items differ at various age levels.
5. It is not recommended to be used with children of normal or above-average verbal skills.
6. Test materials are quite costly, some of the pictures are outdated, and the manual is poorly designed (two separate booklets with black and white illustrations).

Test Name: Merrill-Palmer Scale of Mental Tests

Author: Rachel Stutsman (1931)

Publisher: Western Psychological Services
12031 Wilshire Boulevard
Los Angeles, CA 90025

Description:

The Merrill-Palmer Scale of Mental Tests is primarily a non-verbal performance battery of mental tests, and was intended to serve as a substitute or supplement to the Stanford-Binet. The test was designed to evaluate children 18-72 months of age, but due to norming problems it is now recommended to be used with children of a chronological or functional age of 24-63 months. It was originally normed on non-handicapped pre-school children, but has been found useful in evaluating pre-school children with language and other handicaps (except the physically handicapped). Some researchers consider it to be the most appropriate test for young artistic children (Rutter, 1976).

Items assess the child's fine motor coordination, spatial discrimination, manipulation of materials, and memory for words or groups of words. It consists of 38 tasks, 16 scored on a pass-fail basis and 22 on a partial credit scale; many of the items are timed. The test starts at the 18-month level and items are grouped into six-month clusters.

Age Range: 18-72 months (recommended for 24-63 months)

Type of Score: Mental age or Percentile Rank; I.Q. can be calculated using the ratio method.

Positive Aspects:

1. Testing procedures allow for flexible sequence in the administration of items, making allowances for items refused. The test is useful when working with uncooperative, behaviorally difficult children or those with uneven skills.
2. The majority of the performance items require minimal verbal directions and no verbal responses.
3. Even though the test was designed for non-handicapped children, most handicapped children find the materials and packaging attractive, interesting, and motivating.
4. The test is easily scored.

Negative Aspects:

1. The original (1931) standardization was done with non-representative samples and with an inadequate number of subjects at each age level; in addition the norms are old and out of date.

2. The manual is poorly organized, difficult to use, and omits information concerning test construction and reliability data.
3. Coorelations with the Stanford-Binet range from .22 to .79 (median .51). Sattler (1981) noted it correlated more highly with other preschool measures.
4. Age range is quite narrow, from two years to five years, three months.
5. Many of the items are timed, and this may be a disadvantage to the slow-working, poorly-coordinated, severely-retarded child, or other children with a limited understanding of working quickly for more credit or completing a task.

Test Name: Bayley Infant Scale

Author: N. Bayley (1969)

Publisher: Psychological Corporation
304 East 45th Street
New York, NY 10017

Description:

The Bayley Scale of Infant Development (BSID) is a carefully designed standardized measure of infant development. It was designed to provide information on the child's current developmental status and the extent to which it deviates from that of other children the same age. The BSID consists of three scales: a Mental Scale, a Motor Scale, and an Infant Behavior Record. The Mental Scale consists of 163 items, evaluating, shape discrimination, sustained attention, purposeful manipulation of objects, imitation, comprehension, vocalization, memory, problem solving, and naming objects. The 81 items in the Motor Scale assess the child's developing ability in controlling and coordinating his body in space. Both scales are scored separately. The third scale, the Infant Behavior Record, is a systematic way of assessing and recording observations of the child's behavior during the examination.

Age Range: 2 to 30 months

Type of Score: The Mental and Motor Scales yield a normalized standard score for children 2-30 months, with the same characteristics as a Deviation I.Q. A mental age can be obtained for older children who score on either scale at less than 30 months.

Positive Aspects:

1. It is a well-constructed, standardized test that is psychometrically sound (Sattler, 1981).
2. It is useful for identifying young children whose development is slow and who may be in need of special services.
3. Parent input is considered, and parents can be present during the administration.
4. It has been shown to be useful in evaluating handicapped children above the age of two and one-half years when other tests are too difficult.
5. Test is developmentally sequenced and broken into small developmental increments.

Negative Aspects:

1. It is difficult to administer, consisting of many different types of tasks and requiring a large quantity of information to be retained by the examiner.

2. It is lengthy to administer, requiring 45 to 75 minutes.
3. It is not designed as a predictive measure for infants.
4. It was designed and standardized on a non-handicapped population.

Test Name: Psychoeducational Profile

Authors: E. Schopler and R. J. Reichler (1976)

Publisher: University Park Press
233 East Redwood Street
Baltimore, MD 21202

Description:

The Psychoeducational Profile (PEP) is a developmental assessment instrument specifically designed for the evaluation of children with autism, psychosis, or related developmental disabilities. It is an inventory of behaviors and skills, developed to identify uneven and idiosyncratic learning patterns and for use in planning an individualized educational program. It yields a composite developmental score plus a subtest score in each of seven areas: imitation, perception, fine motor, gross motor, eye-hand integration, cognitive performance, and verbal performance. It also contains a Pathology Scale, which can be used as a diagnostic tool, identifying the degree of behavioral pathology or psychosis the child exhibits in the areas of affect, relating, language, sensory modes, and play and interest in materials.

Age Range: Designed for children functioning in the pre-school age range, with a chronological age from 1-12 years.

Type of Score: A composite developmental age score plus a developmental score in each area.

Positive Aspects:

1. It is a useful measure for assessing children with autism and related disabilities, due to the following characteristics:
 - a. Items were specifically selected and empirically established as suitable; materials are concrete, and offer some success, even for severely impaired children.
 - b. Most items are not dependent on language skills and require minimal verbal directions.
 - c. The test specifies administration procedures that are flexible, and which can be tailored to the individual.
 - d. None of the items are timed.
2. It employs a three-way scoring system, i.e., correct, incorrect and "emerging" the latter designation used for partially learned skills.
3. It provides useful information about the child's skills which can readily be used in developing individualized educational programs.
4. Items are developmentally arranged from one to six years, with the lower developmental levels being emphasized.

5. Though not designed as a precise standardized measure, it correlates well with the Merrill-Palmer, Vineland Social Maturity Scale, Bayley Infant Scales and Peabody Picture Vocabulary Test.

Negative Aspects:

1. It is not designed as a precise standardized measure and has weak psychometric properties. It has been normed on a limited non-representational sample, and no reliability or validity studies are presented in the manual.
2. It does not come in kit form, and an examiner needs to gather and make many of the materials.
3. Items are not developmentally arranged, thus an examiner needs to be familiar with the test when evaluating low functioning children.
4. Clinically and for programming, it is most useful to use with children functioning in a limited age range, from two and on -half to five years old.
5. The scoring criteria for the Pathology Scale are not clearly defined, making it difficult to objectively rate the behaviors involved.
6. Item criteria are not well specified for some tasks.

Test Name: The Autism Screening Instrument for Educational Planning

Authors: D. A. Krug, J. R. Arick, and P. J. Almond (1980)

Publisher: ASIEP Educational Company
3216 N.E. 27th Avenue
Portland, OR 97212

Description:

The Autism Screening Instrument for Educational Planning (ASIEP) is a five-component screening instrument designed to be used in the public schools to aid in the identification and placement of autistic children. Each component can be used individually or as part of the complete battery. The components are:

1. Autism Behavior Checklist is a checklist of non-adaptive behaviors, to be completed by a person familiar with the child.
2. Sample of Vocal Behavior evaluates the area of expressive speech at the preverbal and emerging level.
3. Interaction Assessment elects an individual's social responses in a controlled setting with stimuli presented in a systematic fashion. It measures spontaneous responses as well as reactions to requests.
4. Educational Assessment is designed to provide information to assist in program placement, and probe an individual's repertoire of adaptive behavior and understanding of various language concepts.
5. Prognosis of Learning Rate examines an individual's response and learning acquisition rate on a black/white sequencing task.

Age Range: Not specified--has been used with preschoolers through adolescents.

Type of Scoring: Can be used as a criterion-referenced measure or for pattern comparison with specified disabilities.

Positive Aspects:

1. Relatively extensive validity and reliability studies with autistic and severely handicapped populations.
2. Designed specifically for the autistic population, and each component looks at an area crucial to the diagnosis.
3. Useful in aiding placement in the public schools.
4. The Autism Behavior Checklist is a good, easily-used instrument for this population.

5. Four of the components (except prognosis of learning rate) can be used as criterion-referenced measures to show an individual's growth over time.

Negative Aspects:

1. Does not provide information useful for programming.
2. Other measures are better designed and easier to use in the area of expressive language and educational assessment.
3. The social interaction assessment and learning rate assessment are interesting components which seem more suitable for research purposes than educational placement.
4. Information is difficult to interpret and use.

Test Name: Developmental Activities Screening Inventory

Authors: R. F. Dubose and M. B. Langley (1977)

Publisher: Teaching Resources
100 Boyston Avenue
Boston, MA 02116

Description:

The Developmental Activities Screening Inventory (DASI) is an individually administered performance-based screening measure designed for use with developmentally delayed preschool children, especially those with auditory or language problems. It consists of 55 developmentally sequenced items, similar to those included in tests of early cognitive development, assessing fine motor coordination, cause and effect, meansend relationships, associations, number of concepts, size discrimination, and seriation.

Age Range: 6-60 months or functioning in that range.

Type of Score: Developmental level.

Positive Aspects:

1. It can be flexibly administered.
2. It uses limited verbal directions, and few items require a verbal or signed response.
3. It is designed to be administered by teachers.
4. It is easy to administer, and can be completed in one 20-40 minute session.

Negative Aspects:

1. It is not designed as a comprehensive assessment instrument, but the manual contains some programming suggestions.
2. The kit does not contain all the necessary materials.
3. Manual does not contain information on test development or a complete analysis of its psychometric properties.

Test Name: Diagnostic Inventory of Early Development

Author: A. Brigance (1978)

Publisher: Curriculum Associates, Inc.
Woburn, MA 01801

Description:

The Diagnostic Inventory of Early Development was designed to serve as an assessment instrument, an instructional guide, a record-keeping tracking system, a tool for developing and communicating an individualized education program, and as a resource for training parents and professionals. The Inventory consists of 18 skill sequences from birth through the developmental age of six years in the areas of psychomotor, self-help, speech and language, general knowledge and comprehension, and early academic skills.

Age Range: Birth through six years.

Type of Score: The test is criterion referenced.

Positive Aspects:

1. It is a comprehensive tool to use in developing and sequencing an individual educational program.
2. It provides some norm-referenced guidelines within a criterion-referenced format.
3. It provides an easily-used, interpreted record-keeping system.

Negative Aspects:

1. It is difficult and unwieldy to use for assessment, unless specific skill sequences are chosen to finely delineate the skills in a specific area.
2. It contains many sequences requiring verbal directions and responses.
3. The format and layouts used for pre-academic skills, general information, and concepts are visually complex and difficult to use with many handicapped children; they may fail to elicit skills the child may demonstrate in other formats or with objects.
4. It is not informative or useful for severely-involved or low-functioning children.

Social Skills: Assessment and Interventions

Sheila Merzer

Lyle Chastain

Sheila Merzer has been involved in the Program for Autistic And Other Exceptional Children since its inception in 1971 at the University of Minnesota. She has an M.A. in Educational Psychology from the University of Minnesota and 11 years of experience working with autistic-type children, their families and schools. Areas of special interest include educational assessment and follow-up consultation designed to create appropriate interventions within public school settings, parent guidance, teacher education and inservice training.

Lyle Chastain has been involved in the Program for Autistic and Other Exceptional Children since 1973. She received her B.A. from Oberlin College in Psychology and her M.A. in Educational Psychology from the University of Minnesota. Lyle has written "A Handbook on the Use of Songs to Teach Autistic and Other Severely Handicapped Children" and conducts workshops on the use of music as a teaching medium. She also does extensive filming of children in the Autism Program and makes videotapes demonstrating teaching techniques and child change over time. Lyle also works individually with several young autistic children in the Program.

Both Sheila and Lyle have presented professional training workshops throughout Iowa and Minnesota as well as the surrounding states of North and South Dakota, Illinois, Michigan, and Nebraska. They recently presented at the National Society for Autistic Children's 1982 conference in Omaha, Nebraska. Since 1978 the Autism Program has been located at Minneapolis Children's Health Center where both Sheila and Lyle had the opportunity to work closely with medical staff. Participation in residents training is a regular part of Sheila and Lyle's position. Since this new affiliation, the Autism Program is able to offer high quality adjunct medical services to autistic children and their families.

SOCIAL SKILLS:

ASSESSMENT AND INTERVENTIONS

Sheila Merzer
Lyle Chastain

INTRODUCTION

Most parents take for granted the appearance of the earliest signs of socialization and communication in their children. Soon after the newborn comes home from the hospital, his parents begin the process of learning to distinguish their infant's cries and respond to his non-verbal cues. Does his cry mean he is hungry? Does he want to be picked up? Do his diapers need changing? As time goes on, most babies begin to turn their heads when someone walks in the room, reach up their arms to be picked up and respond positively to their parents' comforting words. No one has to consciously "teach" most infants to do these things.

Unfortunately, the parents of autistic children often do not get these positive social responses from their autistic child. Instead, they may notice early in the first year of life that there is something "different" about the development of their young child. The baby doesn't "feel right" when held and may often seem to prefer being left alone in the crib to being held or played with by family members. The baby may seek out stimulation more from repetitive body movements (rocking, finger gazing) than from crib toys or other people.

Parents of autistic children often begin to seek professional help before their child reaches the age of two. But the young autistic child is often quite a handsome or pretty child whose gross motor milestones have been within normal limits. The parents are all too often told that all children develop differently and that their child "will grow out of it in time." They are then sent home with advice on how to stimulate their child's growth and provide a consistent environment; and told to "come back in six months." It is generally not until the autistic child has failed to develop communicative language by the age of two and a half or three that the severity of his difficulties are confirmed, a diagnosis is assigned, and the need for intervention is established.

While the failure to develop communicative language is generally perceived by most parents as the primary handicap of their young autistic child, a closer look at the autistic toddler generally reveals a child whose functioning is atypical in a wide variety of ways. Hyperactive and easily distracted or lethargic and difficult to motivate, the child is generally unresponsive to his parents' efforts to manage his behavior and teach him the early baby games that most children learn to play. Seeming to prefer to be left alone, the toddler may spend prolonged periods of time rocking, throwing toys around the room,

repetitively spinning the wheels of a favorite car, or repeatedly lining up a set of blocks in perfectly even rows. The toddler showing behavioral signs of autism may have failed to develop a differential attachment to his parents or may be attached to the point where he evidences extreme difficulties in the area of separation.

To his perplexed parents, the toddler with early signs of autism is an enigma, just as he is to the professionals attempting to establish a definitive diagnosis. Seemingly unable to hear loud sounds and unresponsive when his name is called, the child may immediately turn when he hears the slightest crinkling of a candy wrapper or wake from a sound sleep at the sound of his favorite TV commercial. Seemingly unaware of his immediate environment, the child may remember the location of the cookie jar in every relative's house or protest even the slightest change in furniture arrangement or daily routine.

There are very few facts in the field of autism. However, one area of basic agreement is that autistic children do not respond with growth to typical care, typical behavior management, and typical teaching. Left to function in a regular home or day care setting, the child does not automatically imitate the words or actions of others nor show in any visible way that he is benefiting from the stimulation available in the environment. Because of this fact, professionals in the field of autism have devised a wide range of specialized procedures to teach these children skills and manage their behavior.

However, not all of these methods have proven effective in the long run. In this chapter we hope to address some of the difficulties that have arisen from our emphasis on skills and behavior management. We will do this by taking a fresh look at normal development and how knowledge of normal development can be utilized in the teaching of communication and socialization to autistic children.

The Program for Autistic and Other Exceptional Children began ten years ago at the University of Minnesota in the Department of Psycho-educational Studies. The program began as a Master's level Teaching Education Program with a grant received by Dr. Uwe Stuecher from the Bureau of Education for the Handicapped. At that time program staff had to search to find three children who fit the clinical diagnosis of autism according to criteria established by the Department.

Two years later (September, 1973), seven children had been referred to the program and there were ten University of Minnesota students who voiced a desire to participate in the practicum opportunity afforded by the program. Program staff let it be known by word of mouth that there were three spaces for children open in the classroom. (More than 15 children were referred during the next few months.) The large number of referrals was not related to a sudden increase in the incidence of autism, but rather to the fact that public schools had been mandated to provide service to all children. There was simultaneously an increasing awareness on the part of professionals that children with autistic behaviors had educational needs that were somehow different from the children the public schools had been serving up to that point.

Not all of the children referred to the program were autistic by classic definition, but they all experienced difficulties interacting, communicating, and learning, which made them difficult to manage and teach within existing public school settings. Since program staff had difficulty choosing three children and turning down the rest, a decision was made to start an outreach evaluation and consultation service as a means of offering help to the children's home school district in order to assist in educating the child within community-based programs.

It was with some hesitation that program staff initiated these outreach services. They were wondering what would happen to the children left in community settings with intermittent consultation when these children presented so many difficulties to staff who had been specifically trained to manage their behavior and teach them skills. Program staff were therefore perplexed when the children left in community settings repeatedly began to develop socially, emotionally, behaviorally, and cognitively in ways that had not been observed in the program's "specialized" self-contained classroom. Because of the apparent discrepancy, the staff began to look closely at what was happening in these supposedly less specialized settings and compare their teaching with the teaching that was taking place in the University classroom. It has been from these observations and from eight years of detailed individual case studies that the staff have modified their views and perspectives on autism and have devised their current program approach. The purpose of this chapter is to share these perspectives on facilitating the development of communication and socialization.

The program began ten years ago with a carefully defined intervention approach. The plan was to establish a strong one-to-one relationship with an autistic-type child and then set up a program to manage the child's behavior and teach him specific skills. Within the program setting itself, that is, within the actual classroom, the children did generally improve to some degree both in terms of manageability and in terms of carrying out specific skills (such as color matching, sorting, etc.). However, they would demonstrate these improvements only under specific circumstances for specific persons. As we observed these children over time, it became all too apparent that behaviors that were decreased or eliminated in our setting tended to reappear when the children changed settings or interacted with new persons. We also observed that as one set of inappropriate behaviors decreased, new and sometimes more destructive or self-destructive behaviors emerged. It became equally apparent over time that the children seemed to memorize situation-specific responses without integrating the meaning of those responses. For example, the child might learn to imitate motor movements or use play materials when requested to do so by the teacher. However, the child did not begin to spontaneously imitate the actions or play of other children. Thus, the supposed skill of imitation would be demonstrated under certain circumstances with specific materials, but did not help the child learn how to learn by spontaneously imitating other children playing. Another child might memorize a large number of sight words, for example, and demonstrate the ability to read those words. However, this same child would not comprehend a simple story or be able to follow written directions. Similarly, in the area of language development, a child might learn to label objects upon request, or routinely ask for desired items when they were lined up

on a table. He might parrot specific responses to specific questions, but miss the point of language as communication. In the area of socialization, the child might likewise learn to respond to specific interactions initiated by others, but not begin to spontaneously play with peers. These supposed skills would be observable within the school setting, but when the child was in an environment other than his classroom, he remained the same non-communicative, non-interactional being.

Meanwhile, our staff was observing children in more rural settings where often the children were placed in non-categorical settings where children presented a variety of handicapping conditions. The children were usually given the assistance of a paraprofessional trained to facilitate the child's participation in the program. The autistic child in these settings seemed to be more often developing spontaneous communicative language and spontaneous interactional play. One key we realized to the effectiveness of the programming in the rural areas was that the children were receiving intensive help to benefit from more normal management and teaching.

We became aware that the methodology we were utilizing in our own setting, while undoubtedly resulting in measurable progress in isolated behaviors and skills, was not resulting in changes in the child's overall behavior or ability to learn. In fact we began to feel that many of our so-called "specialized techniques" were actually ingraining some aspects of the autistic handicapping condition. As the chapter progresses, we hope to point out how this specifically happens and what steps we have taken to avoid this pitfall.

CASE STUDY NUMBER ONE: SANDY

At 16 months Sandy was a robust well-built little boy. Watching him wander around the waiting room dropping and picking up a set of keys, staff felt as if there must be some mistake, that he couldn't possibly be here for an evaluation. Sandy looked so normal that it was hard even for our staff to accept that he was presenting serious developmental difficulties.

Sandy's parents were referred to our clinic by a relative. Their pediatrician had assured them that "all children developed differently" and advised them against seeking professional consultation for such a young child. But, listening to Sandy's parents' descriptions, it became more evident that Sandy was not developing typically. His parents stated that he would spend prolonged periods of time lying on his back or wandering around the room staring at his fingers. When they attempted to interrupt this behavior, he would begin to cry inconsolably. While he would pick up and drop specific objects, he did not use his hands in any other purposeful ways. He did not feed himself with his fingers or use utensils and indeed would refuse a piece of desired food if his parents attempted to put the food in his hands and guide it to his mouth. During the intake observation in our classroom, Sandy established a circular route and wandered repeatedly around the classroom never once reaching for one of the many toys sitting out on our shelves. While he would tolerate brief periods of interaction with his parents and relatives, in general, Sandy preferred to be left by himself. He was described as

rocking for prolonged periods of time in his crib and when he was first brought to our setting he had a noticeable bruise on his forehead from "banging his head on things." At the time of referral, Sandy had not yet begun to develop speech and made very few babbling sounds. He also did not appear to understand what was being said to him. While self-stimulating he did not appear to hear environmental noises although at other times he did seem to turn toward sudden sounds. Although 16 months of age, Sandy had never mouthed objects and the only object he ever sought out was a set of coasters at his grandmother's house which he would throw and watch as they rolled across the floor.

At 21 months of age, a Minnesota Child Development Inventory filled out by his mother gave him the following scores:

General Development	13 months
Gross Motor	17 months
Fine motor	11 months
Expressive language	12 months
Conceptual Comprehension	13 months
Situational Comprehension	11 months
Self-Help	13 months
Personal-Social	11 months

As we stated in the introduction, the process of socialization and the beginnings of communication appear quite early in life between the young baby and his primary caretakers. For Sandy and his parents, the normal developmental process had been disrupted. Confronted with a child who did not seem to want contact and who cried inconsolably when his self-isolating hand play was interrupted, Sandy's parents felt both rejected and confused. They disagreed between themselves as to the proper way to respond to their child's behavior and were having difficulty responding to the well-meant advice of concerned relatives and friends. After months of hearing everything from "leave him alone; he'll be fine" to "starve him until he feeds himself" to "all he needs is a good spanking," Sandy's parents were understandably feeling anxious, guilty, confused and concerned. They wanted to do "the right thing" but did not know what that was.

At this point in time, the majority of research points to the fact that autism is a physiologically based disability, although the exact etiology is still unknown. All the children referred to our program undoubtedly do not have the same handicap, but they all have some kind of physiological, neurological, metabolic, cognitive, or language-based disability which affects their ability to interact, to process incoming stimulation, to communicate and to learn.

In order to have a working definition of autism and a rationale for intervention, we look at the child's autistic behaviors as his way of coping with whatever is physiologically or metabolically dysfunctional for him. Unfortunately, these automatic coping behaviors (such as self-isolation) tend to block or prevent growth. Hopefully, the child can be taught more adaptive ways of coping with his disability that do lead to growth. The ways the child is managed, cared for, and taught may make the child worse, unwittingly perpetuate the child's handicap, or facilitate optimal development. While the tendency toward autistic behavior

indisputably begins in the child, interactional patterns do develop between the child and his parents which may affect growth. It is also true that over time these interactional patterns become more and more difficult to change.

Fortunately for Sandy and his parents, intervention was begun at an early age before his patterns of self-isolation and self-stimulation were deeply ingrained and before his extended family had totally fractionated as to what to do about his behavior. Intervention with Sandy and his family focused on assisting the parents in exploring the feelings triggered by Sandy's handicap while teaching them ways to interact with Sandy and respond to his behavior. The initial primary goal was to increase Sandy's tolerance for interaction. Sandy was brought to our setting once each week for an hour. One of our staff worked with Sandy while another staff offered guidance and support to his parents and relatives from behind a one-way mirror. Sandy's parents and relatives also took turns playing with Sandy with our staff.

The intervention approach was based on the over-simplified assumption that ordinary interaction was too much for Sandy to tolerate. He appeared to become too quickly overstimulated and he seemed to cope by "tuning out" via self-stimulation. The intervention approach offered intensive but organized and predictable intrusion for very brief periods of time. For example, Sandy's parents were taught to "walk" their fingers toward him again. One person would sit behind Sandy and guide his hand out to receive the tickle. The other person would be the finger walker and tickler. This kind of activity can most accurately be called "intrusive play" since the child does not, on his own, initiate the interaction and often, at first, is not responsive to the play activity itself.

As the parents began to realize that Sandy's problem was "not their fault" and that his lack of response was not the result of their lack of parenting skills, they began to accept the challenge of designing activities to actively engage their son for short moments of play.

As they began to understand the need for interaction and the rationale for intervention, they began to devise their own activities. For example, Sandy's mother would clap her hands together over one of Sandy's hands, then move her hands away. Sandy began to reach up and put his hand between his mother's hands in order to feel the clapping.

Sandy's gross motor skills were only slightly delayed. He could walk and run, although he seldom chose to do so. Typically young children enjoy chase games. Sandy did not initially respond much less initiate games of this variety. In order to facilitate further interaction between Sandy and his parents we began a rudimentary chase game. Sandy's mother and the therapist would stand approximately three feet apart. The therapist would point Sandy toward his mom and she would say "I'm going to get you" and run to Sandy as the therapist guided Sandy toward her. She would then pick him up and swing him around. Then she would guide him toward the therapist who would "catch him" and swing him around. This game was played by all the family members and Sandy began, slowly, to respond with smiles and eventually giggles as he was spun around. As time went on, he began to run away and look to be chased.

When this game was begun, it looked as if Sandy did not want to be actively involved. Because his parents were able to understand the importance of getting him to respond, they were able to continue this activity, even though they did not initially get the kind of feedback (in the form of laughter and enjoyment on Sandy's part) that typically would keep parents happily engaged in the activity.

As these interactional activities were going on, we were also involving Sandy in other activities such as having him touch a see-and-say in order to have an adult pull the string and make it talk. At first, Sandy needed guidance to touch the toy, but later, to get the desired sound, he would reach out independently.

Sandy also enjoyed watching bubbles. The staff used bubbles to facilitate eye contact (Sandy would look at the person who was blowing the bubbles). As Sandy began to reach out to pop the bubbles, the person blowing the bubbles would drop the bubble wand on the floor and guide Sandy to pick it up and hand it to her in order to keep the activity going. As the weeks progressed, he learned to pick up the bubble wand, bring it back and put it in the bubble jar.

Sandy's mom also played pat-a-cake games with him. She also played peek-a-boo by putting a small blanket over her head and guiding Sandy's hands to pull it off her head at which point she would say "Peek-a-boo."

Within weeks, Sandy's periods of self-stimulation became less frequent and less intense. He began to have noticeable difficulty tuning out auditory input when self-stimulating. Although he would still cry when his parents interrupted his self-isolation, he began to respond to their comfort and would more quickly calm down and get involved in a favorite activity.

The first step of the intervention approach thus was designed to give Sandy intensive periods of stimulation designed to enable him to better tolerate--and hopefully enjoy--contact and thus set in motion between Sandy and his parents a more typical interactional process that had not occurred naturally.

Within weeks Sandy had become more responsive to interactional play. Interacting with him was thus more rewarding for his parents and they began to bring him to our setting and show us the activities they had devised during the week.

One year later Sandy is still delayed in most areas of functioning. His behavior is more difficult to manage than that of most children, but he has begun to develop spontaneous language and he understands and responds to simple requests. He uses his hands purposefully to manipulate materials and feed himself and he is beginning to play appropriately with simple puzzles and musical toys. Sandy is currently choosing to play with toys or demanding attention from his parents rather than withdrawing, self-stimulating or banging his head.

Most professionals would not dream of setting up a structured task-oriented teaching approach for a 16-month-old child like Sandy. It would

not enter their heads to force such a child to "sit down and look at me," match colors, or complete form boards. Yet for the children referred to our program at older ages, that is exactly what we were doing--regardless of the fact that the children had generally not developed beyond Sandy's age socially, emotionally or cognitively. What we were trying to do was take a ten-year-old infant and superimpose the training of language and skills rather than setting in motion a more natural developmental progression based on the child's functional age. The question of how much and to what degree it is possible and feasible to "back up the clock" and fill in the gaps in terms of normal development remains open and critical to the question of what constitutes optimal intervention for building communication and socialization in autistic children.

CASE STUDY NUMBER TWO: JOSH

Josh was initially referred to the Program for Autistic and Other Exceptional Children several years ago at age two and a half. His functioning since age one had been markedly different from that of his fraternal twin Jacob. Where Jacob had begun playing with toys and engaging in intelligible conversations with his parents, Josh spent the majority of his time running around the room actively avoiding most attempts to interact with him. Like Sandy, his only use of objects consisted of picking them up and throwing them down. Josh would scream for hours when he was prevented from doing what he wanted and he rocked more than he slept during the night. Like Sandy, Josh had failed to develop receptive or expressive language. He tended to communicate "no" by running away and screaming; he expressed a desire for food by pulling his parents' arm toward the refrigerator or cupboard. Other than that, Josh did not communicate. He appeared most content when left alone to run.

Josh participated in our morning pre-school three hours daily, five mornings each week. He was assigned an individual one-to-one teacher who was a practicum student participating in the program. When a new child enters the classroom, our trainee staff is taught to think in terms of prioritizing goals for the child and considering alternative intervention strategies. For Josh it was decided that his primary needs lay in the area of increasing his tolerance for interaction and establishing a differential attachment with his individual teacher. Only when he would willingly remain in contact with another person could he be expected to begin to learn how to learn.

Confronted with a child who would run aimlessly around the room when left to himself and scream inconsolably when forced to interact, Josh's individual teacher had several choices in terms of intervention. She could try following Josh around the room imitating his behavior and gradually getting closer to him. While this approach might have proved effective in terms of slowly establishing contact with Josh, it was decided that, given the intensity of Josh's avoidance this approach would take too many hours. Another approach to consider would involve trying to work with Josh despite his screaming. While this approach has also proved useful with some children, it was quickly decided that since Josh could scream for several hours in succession, it would not be beneficial to have him upset for the entire class time. This would only lead to his finding school an unpleasant experience, to say the least, and we

wanted him to learn to enjoy learning. While some programs intervene by isolating the screaming child, Josh's behavior appeared motivated toward self-isolation and this approach was therefore ruled out. Other punishment approaches were also discarded since it makes no sense to us to teach a child who already seems to find human contact aversive by being even more negative to the child. If our primary goal is for Josh to seek interaction, it does not seem logical to use aversive programming, thus making people punishing rather than positive agents.

Josh's individual teacher began working with Josh in much the same way as our staff begins working with all avoidant children: by looking for a place or materials that would help Josh willingly tolerate interaction. For Josh it turned out to be a place. He would tolerate his teacher holding him on the swing. One interpretation of the effectiveness of the swing is that the vestibular stimulation provided by the swing was calming enough that Josh was able to tolerate intrusion. Another explanation is that the swing was rewarding enough that Josh was willing to tolerate his teacher's presence in order to remain on the swing. Since his teacher realized that Josh was responding positively to the swing's movement, she began simultaneously working with Josh in the classroom on the rocking horse.

Next, Josh's teacher moved favorite activities, initiated on the rocking horse, to other locations again finding ways to incorporate movement into the interactions. For example, she would take Josh's hands and rock him, then let go of his hands and say "give me your hands." Josh would hold out his hands to continue the rocking motion. The teacher might then say to Josh, "give me your feet" (adding a gestural cue when necessary to help him understand) and then she would rock him by wiggling his legs while he was sitting in a chair. In this and all activities, the teacher would take what was rewarding for Josh (e.g., the rocking) and build this rewarding element right into the activity or interaction rather than asking Josh to perform a specific movement or task and then offering him an extrinsic reward not directly related to the activity. The rationale for this approach was that our primary objective was not to get Josh to comply by holding out his hands or feet, but rather to find ways to make interaction itself rewarding for Josh.

A related objective of these early activities was to involve Josh in cause-effect sequences: i.e., to teach him that an action on his part would result in a desired response in the environment while at the same time trying to motivate him to actively try to figure out what the teacher was requesting. These objectives are important prerequisites to language and learning.

Had the teacher been thinking specifically in terms of receptive language training and of teaching Josh to differentiate hands from feet, she might have tried the approach that our program utilized ten years ago: trying to teach a non-language child one word at a time in a repetitive teaching format. In other words, she might have asked Josh to "give me your hands" repeatedly until he was responding to this request without a gestural cue or other prompt. Thinking then that he had mastered this response, she might then ask him for his feet. Josh would predictably have held out his hands. Basically this is because he would have learned

to do what he had done the time before when sitting face to face with his teacher playing the rocking game. His teacher could then possibly teach Josh to "give me your feet" and, if he was connecting language with meaning at all, he might learn to distinguish hands from feet. However, when asked to "touch your nose," he would predictably produce all previously learned responses before learning to produce the new response. He would be producing rote responses since if asked to "stand on your feet," or "put the cup on your nose," he would simply hold out his feet or touch his nose. He would not be processing the incoming language but instead be producing the response he had been taught to produce in response to cue words.

In most children language develops at least partially as a function of interaction. Children like Josh have not been interacting in typical ways and thus have not had the opportunity to develop language naturally. Trying to train language without a foundation of interaction has in our experience produced children who at best produce rote response patterns. It is equally true that typical interaction does not develop in children who are having difficulty understanding and communicating. In other words it may be the child's language-based difficulties that have adversely affected his ability to interact. One is stuck with the proverbial question of which comes first, the children or the egg. Regardless of the nature of the individual child's underlying disability, it has been our experience that the most natural socialization and communication develops when the teaching in the two areas of communication and interaction is integrated together.

In terms of normal development, non-verbal communication develops before verbal communication. Trying to train speech without a foundation of non-verbal communication would again be superimposing skills on a child who is missing the necessary developmental framework. Repeatedly, in our experience, when children master skills trained in this manner, they fail to integrate the meaning of those skills and thus do not spontaneously utilize the skills. In fact, these skills are usually only demonstrated when specific cues are given to the child in specific environments. Because of our desire to help facilitate normal development, intervention for Josh began by trying to facilitate the development of such early non-verbal communications as eye contact and the anticipatory response. Again, we looked for an activity that Josh enjoyed.

One such activity we found was being picked up in the air and flipped over. Josh's teacher picked him up and flipped him over repeatedly until Josh began putting his arms up to be flipped over. She also held him in the air over her head until she caught his eye. When he looked at her she immediately slipped him over. The intent was for Josh to discover that looking his teacher in the eyes brought him a response that he understood and desired.

When our program began ten years ago, the intervention approach attempted to train eye contact in a compliance-oriented vacuum. While the teachers understood that it was necessary to look in order to learn, the children had no understanding of why they were being asked to look. Pretty soon the children were looking everywhere but in the teacher's eyes

except in a specific situation when told to "look at me." It was from rethinking the developmental process that we learned to facilitate the development of eye contact by making looking intrinsically rewarding for the child. The staff now makes sure that looking results in a positive interactional response on the part of the teacher. Spontaneous looking is rewarded by an enjoyable activity.

During the early months of intervention Josh's teacher attempted to facilitate the development of non-verbal communication, including eye contact, within an interactional framework rather than training these skills one at a time in a compliance-oriented framework. Taking a similar look at normal development, staff observed that children build receptive language more by listening to others label what they are doing than by being told what to do. Ten years ago we tried to train receptive language one word at a time by telling a non-verbal child to, for example, "give me the BALL" (to be chosen from a set of three objects on the table). While the teacher thought she was teaching language, the child without receptive language was at best looking for visual or other cues in order to find the response that would satisfy the adult. More frequently the frustrated child (who did not process incoming language and thus may have even been unaware that language was the relevant variable) was engaging in a wide range of "avoidant" behaviors in an effort to escape this incomprehensible situation.

With Josh, as with other children, staff learned to try to build receptive language via "parallel talk"--i.e., by labeling Josh's actions in simplified words and phrases. Once again the approach attempted to intensify and simplify language input in an effort to set in motion a natural developmental process (receptive language building) that had not occurred naturally.

Attempting to implement a parallel talk approach with children like Josh, staff are immediately confronted with the fact that the child is not doing much that is appropriate to label. Most typical children develop language and socialization through play and by nature autistic-type children do not play. Our staff learned over the years that training language and skills without a foundation of play may lead to the development of task specific language, but does not ultimately lead to functional communicative use of the mastered language skills.

Yet as parents know all too well, just playing with an autistic-type child does not promote growth. However, play with a purpose can be a highly effective intervention medium. Over the years our staff has developed ways of utilizing intrusive play to facilitate the development of language and socialization. We often begin by looking at what minimal behavior the children have and trying to figure out how to utilize this behavior in teaching.

The majority of Josh's early behavior consisted of running aimlessly around the room and picking up and throwing materials. It is obviously quite difficult to work with a child who is continuously running away. Yet running away was one of Josh's few spontaneous behaviors. Our early intervention approach therefore looked for a way to use Josh's running away in order to help teach him.

The approach we used was the following. Two staff stood several feet apart. Josh's teacher would say "run away," while giving Josh a gentle push toward the other staff person. The second staff person would call "come here Josh" and quickly "trap" him in her arms and spin him around. Next this staff person would put Josh down and send him off toward his teacher. Soon, Josh was running back and forth between them to be swung. The next step was to have Josh run from his teacher to the wall and back to his teacher again. One outcome of this approach was that Josh ceased his frequent running away as he began to choose to be near an adult. A second outcome of this activity was that Josh began to turn and come in response to the words "come here, Josh." Initially he would come because he enjoyed being swung and later he would come just because he had been called and he understood the meaning of the words. In short, the purpose of all our early play activities is to teach the children language that is meaningful to them within the framework of interactional activities that are intrinsically rewarding to them.

As was previously stated, another one of Josh's quite frequent behaviors was throwing materials. Again this was one of the few spontaneous behaviors Josh demonstrated upon entering our classroom. Rather than setting up a program designed to eliminate Josh's throwing, his teacher decided to assume that Josh had some interest in the materials he picked up to throw, but that he had no idea of how to use these materials in meaningful ways. She therefore made it her goal to extend how long he would hold onto the materials. She guided him quickly through the motions of using the materials in some way, then helped him put the materials down rather than throw them down.

Josh frequently picked up lego blocks and threw them on the floor. His teacher attempted to get him interested in trying to stick his fingers in the holes. Once he would willingly hold the block for a few seconds while he stuck his fingers in the holes, his teacher guided him through the motions of putting two blocks together and taking them apart again. When Josh tried to fit the blocks together on his own, he was not able to do so effectively. Either he had motor planning difficulties which were underlying his resistance to using materials in purposeful ways or else he had not practiced using materials enough to develop the necessary perceptual-motor skills. For whatever reason, he had difficulties putting them together. At any rate, when Josh was unable to effectively fit the lego blocks together, he immediately began to tantrum and he threw the blocks away. Josh's teacher intervened by bringing the blocks back to Josh (thus showing him that throwing materials would not get rid of them) and telling him that she would help him fit the blocks together. Her main goal was to teach him to accept help to accomplish a desired activity rather than to teach him to independently fit two lego blocks together. Once Josh understood that his teacher would help him be successful, his body tension level visibly decreased and his tolerance for trying to put lego blocks together increased rapidly. His teacher soon was able to sit near Josh and label his actions: "PUSH the blocks together, PULL them apart" as Josh contentedly played.

Like Josh, most of the children served by our program appear unmotivated to learn to use materials in new ways. Ten years ago our staff perceived and described these children as "negative...avoidant..."

non-compliant." However, we began to note that, like Josh, most of the children had real difficulty when they attempted to interact, communicate, play, and learn. Like Josh, when they did really try to accomplish something, they were in a sense perfectionistic; usually some aspect of the activity was difficult for them, and they reacted immediately to that difficulty by "tuning out" or "tantrumming." Rather than addressing the "tuning out" or "tantrumming" within a behavioral framework of applying a contingency after the behavior occurred, staff began to intervene by teaching the child to accept help in order to learn.

Thus once again we began to look at the children within the guidelines of a more typical developmental progression. When our program began, we tended to take children like Josh and teach them skills in a task format: building a tower, matching colors, putting together puzzles... were samples of our frequently listed goals. The outcome was children who would perform mastered tasks over and over in a perseverative manner but who continued to actively protest new activities. The children had memorized tasks but had not learned how to learn. We therefore changed our goal to teaching children to accept and later ask for help. Once this goal was achieved, the child was more able to begin to learn in more natural ways and the "tuning out"/"tantrumming" became a less frequent, less pervasive response to new materials and situations.

Because of the fact that most autistic-type children tend to have a good deal of difficulty tolerating error, our early intervention approach tried to minimize the children's opportunity to experience error by teaching them tasks in what is commonly referred to as an errorless learning format. For example, Josh's teacher would line up the rings from the ring stacking toy in the right order on the table so that Josh would not make a mistake when putting the rings on the stick. The result was a child who would place the rings on the stick in the right order when the task was externally structured, but who got quite quickly frustrated and threw the materials if he accidentally made an error. Once again, he had memorized a task procedure, but had not learned how to learn or how to correct a mistake when it occurred.

Most children learn by trial and error. Children like Josh have extreme difficulty tolerating error. Teaching these children that there is only one way to complete a task--the right way--was in a sense ingrainning their handicapped condition of not being able to tolerate error as was the errorless learning teaching approach. It is much more useful to teach a child how to tolerate error and help provide an environment where normal trial and error learning can occur.

A prerequisite to the process of socialization is being able to initiate as well as respond to the requests of others. Our old teaching method which trained specific response to specific situations was in essence inhibiting the development of spontaneous interaction and creative play. At the foundation of creative play is the idea that one set of materials can be used in multiple ways (which is the direct opposite of performing one task the same way over and over again). Similarly, communication is not rote responding to specific situations with memorized words; it is rather putting words together in multiple and varied ways.

Our feeling is that this kind of learning can not be rote taught, but can be successfully facilitated in autistic children.

For Josh, intervention in the aforescribed areas began by taking tasks he had previously mastered and showing him there were different ways to use the same materials. Within weeks, Josh was exploring using materials in new ways and looking up at his teacher for approval in what was more "natural" eye contact than any that had previously been obtained. He also appeared less frustrated when presented with new materials since he had grown interested in exploring ways to manipulate them.

Where Josh did not generalize the function of skills and tasks that had been memorized, and trained, the processes of accepting help and exploring materials did become integrated into his overall functioning. For example, rather than going up the stairs and down the slide on his seat, he began to run up the front of the slide and run down or slide down on his tummy or on his back. As his exploration of play materials increased, his running and self-stimulation decreased. By the end of one year of intervention, Josh was learning how to play and learning how to learn, beginning to understand language and attempting to communicate. His tantrums were far less frequent and much less intense as his frustration tolerance improved and his enjoyment of interaction and learning grew. Unfortunately Josh and his family moved long before we were able to measure the overall effectiveness of our newly developing approach in terms of facilitating in Josh the development of meaningful communication and socialization.

CASE STUDY NUMBER THREE: MICHAEL

Michael was referred to the Program for Autistic and Other Exceptional Children two years ago. Non-verbal at age three and a half, he appeared extremely fearful of new environments and people. Because of his extensive difficulty in communicating, Michael's mother had become extremely sensitive to the every need of her easily frustrated little boy. Because of his tendency to isolate himself and spend prolonged periods of time sitting and rocking, seemingly oblivious to other people and the environment, Michael's mother worked long hard hours to get him to relate to her. Unable to get help from professionals who reassured her that "all children develop differently," and instinctively protective and talented as a teacher, Michael's mother worked diligently to achieve a close relationship with her withdrawn little boy. This she did very successfully. However, she was not able to use this relationship to help her child grow into a separate autonomously functioning little boy.

When Michael was first brought to our setting, he would cry and visibly tremble if an effort was made to get him to leave his mother's side. Because we did not want Michael to be terrified each time he came to our clinic, we began our intervention by attempting to facilitate rather than force separation. Michael's teacher began working with him while he was sitting on his mother's lap. Later his mother was able to move to a corner of the room, then to the hallway outside the playroom. Within several weeks, Michael was happily arriving at school, separating easily from his mother, and interacting with his new teacher.

Where Josh would initially interact the most willingly on the swing, Michael's preferred activity was bubbles. Michael's teacher therefore began intervention using bubbles in many ways; Michael demonstrated that he had some receptive language by holding out his hands and feet in order to have his teacher blow a bubble on them. His teacher built imitation and eye-foot coordination by showing him how to step on bubbles to pop them. Not surprisingly, Michael's first spontaneous word was "bubbles." Initially, his teacher brought out the bubbles every time Michael said the word, regardless of the activity taking place at the time. Her primary goal in the area of communication was to teach him that language can control.

Language develops at least partially as a child's means of exerting effective control over other people in the environment. One of the earliest words many typical children say is "no." Autistic children tend to control the environment in ways that are deemed "inappropriate." They refuse to focus, they throw materials, they avoid interaction...etc." Since these children are frequently perceived as "non-compliant," many intervention programs begin by trying to control the child's behavior. What the child is unwittingly being taught is that he does not have the right to control: that he does not have the right to say "no." The outcome of this approach is all too often robot-like compliant non-initiating, non-communicating children.

When our program began ten years ago, staff attempted to build language by withholding desired objects and food until the child produced a sound or word. While at times this approach did train previously non-verbal children to produce sounds and even words in response to externally structured situations, the approach did not lead to spontaneous language or meaningful communication.

Rather than withholding objects from Michael until he produced the appropriate word (an approach which associated language with frustration and external control), Michael's teacher accentuated key words (e.g., pop, bubble) and paired them with actions as she and Michael played. Within weeks Michael was spontaneously saying these words as they played and using words to request favorite activities.

Michael also began using familiar words rather than inappropriate behavior in an effort to control the environment. For example, when he was tired of an activity, he would say "bubbles"; when he was frustrated by an activity, he would also say "bubbles." Michael's teacher intervened by substituting appropriate words "all done," and "help" for bubbles, in accordance with her overall goal of teaching him that language can control.

Like Josh, Michael tended to quickly memorize tasks, become repetitive in the ways he used materials, and became immediately frustrated when things didn't work just perfectly. He would persevere, by repeating a mastered activity (like dumping materials out of a box, putting them in, and dumping them out again) over and over again and protest transitions to new materials. From the beginning, Michael's teacher's intervention program had the multiple emphasis of building language while teaching him to request help when frustrated and to use one set of materials in multiple ways.

Michael especially liked a set of pop-open letter blocks (where pushing on a picture resulted in a letter popping up). Michael incidentally learned to identify the letters of the alphabet as he and his teacher played with the blocks. Since the blocks were quite difficult to open they offered a useful medium to teach Michael to ask for help. Michael would try to open a block and get frustrated when it wouldn't immediately open. His teacher would guide him through the motions of handing her the block and model the word "help." Soon Michael was spontaneously handing her the block and echoing, then initiating the word help. As Michael learned to effectively request and receive help, he began to persevere for longer periods of time trying to open the block on his own (and sometimes succeeding) before asking for assistance. In other words, knowing how to escape frustration increased his willingness and ability to persevere. As each block was opened, Michael would place it next to the other opened blocks in a perfectly straight row. The teacher periodically intervened by helping Michael build a tower with these same blocks. Where at first Michael became upset by the change in his pattern, he soon learned to accept the variation. Eventually he learned to use blocks to build a variety of structures in addition to rows and towers.

When our program began, staff tended to emphasize teaching the children independent living skills. For example independent dressing was perceived for many children as an important goal. Here again the outcome was quite often non-interacting non-communicating self-sufficient children. The typical child learns to approach an adult and say "tie my shoes" long before he learns to tie shoes and to ask for help buttoning a shirt before mastering independent buttoning. Once more our earlier skill training approach had attempted to train passively dependent children who generally required total care and make them independent, skipping the important developmental stage that we have termed "active dependency."

As Michael caught on to the use of language as an effective means of interacting with others and satisfying his basic wants and needs, his vocabulary steadily increased and he began to understand language and sequence words together fairly rapidly. Along with his understanding of language and his ability to communicate came a rapidly growing interest in--and mastery of--pre-academic tasks and skills. However, he continued to experience and present difficulties in the area of socialization. He tended to approach other children and kick or hit them rather than play with them.

In our program's experience, most autistic-type children learn to interact with adults long before they begin interacting appropriately with other children. Once again many of their first interactions with peers resemble those of the normally developing two year old: they hit, kick, bite, etc. However, they are generally minus the appropriate interactions that the typical child demonstrates in between the fights. Also, the kind of management that would normally improve the behavior of a typical child tends to backfire and maintain the inappropriate interactions of the autistic youngster. For example, Michael often approached other children and kicked them. Staff in his afternoon pre-school tried intervening by telling him he needed to sit on a chair by himself after he

kicked. What Michael learned was to kick a child, then sit on a chair. He did not learn not to kick. It has been our experience that, until the autistic-type child is socialized to the degree that he wants to be part of a group, a contingency presented after a behavior occurs brings with it the risk of ingraining the behavior.

This leaves us with the question of what to do to promote the development of appropriate peer interaction. From our perspective, Michael hit and kicked because he did not know how to play. Rather than approaching the situation by looking for ways to decrease his aggressive behavior, we decided to look for a means of facilitating the development of appropriate peer interaction. As often as possible, his teacher would try to prevent Michael from hitting and guide him through an appropriate response to the child he had approached.

One medium used by our program to foster the development of child-to-child contact is externally structured small group activities. Also, group music is introduced into each child's program soon after they enter the pre-school.

Each morning in our pre-school the children participate in one of two 15-30 minute group music sessions. A lead teacher plays the autoharp and leads the sessions and each child attends the session with his individual teacher. As the children become more active participants in music, songs are introduced that more specifically address the socialization process.

Many of the children have difficulty tolerating close proximity and physical contact with other children. However, most of the children enjoy rocking. A song is used in music that uses a rocking boat, where the children sit close together and the adults sing a song about rocking using the children's names.

There are also songs where the children and teacher hold hands in a circle. As the children become accustomed to this activity, the teachers help the children hold hands with each other during these circle songs. There are also other songs where the children pass materials such as balls or tambourines around the circle. This relatively simple activity can facilitate spontaneous eye contact, as well as the skills involved in passing an object from person to person.

Row, row, row your boat (with two children holding hands and "rowing" together) and the song Two by Two, where children participate two at a time in the middle of the circle, are other examples of ways to facilitate child-to-child contact within a structured teaching situation. It has been our experience that the predictable structure of the music group helps many of the children accept proximity to peers that they would not ordinarily tolerate.

As the children progress in skills and language, songs are introduced to the group that more specifically address individual interactional needs. For example, as mentioned earlier, Michael had a difficult time in terms of aggressive behavior when he approached other children. A "good morning song" was written and introduced to the group to help Michael learn

appropriate ways to approach other children. Each child would take a turn going around the circle saying, signing, or somehow signaling "Good morning" to each of the other children. This song was used to help Michael develop appropriate ways to approach other children and give him alternatives to hitting and kicking.

The fact that our program's music director writes the majority of our songs gives us an excellent opportunity to utilize music sessions to address our children's unique needs as they arise.

Snack time is another externally structured group activity that is introduced early in each child's program. The children sit next to each other at a table and, as they are able, take turns passing out food, napkins, and juice. The teachers encourage the child to use language to request desired items from other staff and children.

Other externally structured group activities are designed into each child's program to meet their socialization needs. Again, tolerating proximity and physical contact are the early goals. Sample activities in this area might include having several children next to each other at our sand or water table or asking two or more children to fingerpaint next to each other at the table. These activities could basically be called guided parallel play.

As the children become more accepting of close contact with their peers, sharing materials and turn-taking are emphasized more specifically in each child's program. Gross motor equipment offers a good medium for work in this area.

Children are guided and then verbally encouraged to take turns on the slide and other gross motor equipment. Teachers point out activities that other children spontaneously do (for example, crawling under the jungle gym) and help guide their child to copy the actions of others. Games such as "Ready, Set, Go," where all the children stand together against the wall and then cross to the other side of the room together on "Go," help establish group participation. In this game, the children are asked to run, jump, crawl, etc., from one side of the room to the other. A similar activity involves each child on a scooter board. The children scoot across the room, each with a piece from a puzzle and place them in the appropriate puzzle boards.

Whenever there is spontaneous interaction on the part of two children, the teachers attempt to expand this contact, regardless of the activity that is going on at the moment.

Through this kind of curriculum it is generally possible to promote contact between autistic-type children in externally structured situations. It has, however, been our experience that spontaneous interactional play rarely develops in an autistic population as an outgrowth of such externally structured group learning situations.

As was stated in the introduction, one of the few facts in the field of autism is that autistic-type children do not respond with growth from the opportunity to participate in regular group environments. Placed in an

ordinary nursery school or day care situation, children like Sandy, Josh and Michael would run aimlessly around the room, or withdraw in the corner gazing at their fingers or banging their heads. Staff efforts to involve them in activities with the other children would predictably result in negative behaviors or even unmanageable tantrums. Yet left alone, they would not eventually decide to join the group.

Thus children like Sandy, Josh and Michael are often placed in autism programs where an effort is quite often made to train the skills involved in peer interaction one step at a time. Peer imitation might be chosen as a sample goal. Working toward this goal, the child is seated at a table and chair and trained to imitate his teacher's actions: to clap his hands, touch his head, shake the tambourine, etc., in response to the teacher's cues. Using this teaching method, the child generally learns to respond with the appropriate movements to the teacher's "do this" stimulus, but the child rarely gets up from the table to spontaneously imitate the actions of peers. Once again the child has mastered a task, but missed the purpose of the activity. Just as specific verbal responses can be trained, specific motor response patterns can be trained to specific cues. However, spontaneous peer interaction, like spontaneous speech needs to be facilitated in the most natural possible environment using typical developmental guidelines.

While it is quite clear that placing an autistic-type child in a regular setting does not generally of itself lead to growth, it is equally clear that grouping together numbers of children who all do not interact appropriately cannot lead to spontaneous interaction.

One of the challenges in teaching autistic-type children is that by nature they will persevere on performing mastered tasks repetitively but will actively protest changes in task routine. They will usually respond to unfamiliar activities with a wide range of what are commonly perceived of as avoidance behaviors. One of the messages of this paper is that teaching the child how to learn rather than training specific skills avoids ingraining many aspects of the autistic handicapping condition.

As described in the earlier sections of this paper, a common theme of our intervention program is taking what is rewarding to the child and building it into the task itself. For example, when he first began participating in our program, Michael enjoyed watching balloons being blown up and then let go to "fly" around the room as the air escaped. He needed to develop interaction as well as the ability to focus (attend) and delay gratification. Thus an activity was designed where Michael needed to watch as the teacher "hid" the balloon under one of three cups, then "find" the balloon under the correct cup, then place the balloon in the teacher's mouth. After the teacher blew up the balloon, Michael would go get it and bring it back to the teacher. Once he had mastered the sequence, the teacher avoided patterning Michael's participation by intermittently asking him to place the balloon in her hand or in her mouth before she would blow it up or by asking him to "find" the balloon in one of her closed fists. This general principal of taking what the child enjoys and designing a learning sequence involving interaction around it is common to our intervention program for all children. A second common principal

Illustrated by this activity is that most of our activity sequences involve enough predictability in activity that the child is able to understand the task sequence (and thus maintain involvement) but enough variation within the sequence that the child needs to attend to the teacher for directives as well as the materials. One way of understanding Michael's willingness to participate in the balloon search activity is that it was rewarding or motivating enough to sustain his interest. A second way of understanding his participation is that the purpose of the activity was clear to him.

Our experience working with autistic-type children suggests that, generally speaking, focusing directly on the skill one wants the child to acquire (such as speech or eye contact) invariably leads to behavioral difficulties. For example if an attempt is made to teach prepositions by asking the child to put an object in, on, or under another object, the child will generally place the object in the location that was deemed correct the time before. If that response is not accepted, he will reposition the object until his response is accepted. Generally he learns response patterns (e.g., positioning the object) via this approach. He generally does not, however, learn meaning or why the response is or isn't accepted. If he is later asked to put the object on top of a table or bookcase, he generally is not able to generalize from the previous activity in order to carry out this request. Quite frequently the child will respond to this kind of activity with robot-like compliance, routinely going through the motions of responding without even trying to comprehend the purpose of the activity. Indeed, the child may not even know that the activity has a purpose beyond satisfying the adult. This compliance behavior may be intermittently punctuated by one or many "avoidance" behaviors.

Our staff has learned over the years to take what the child does understand and enjoy and utilize that as a means of teaching the child what he needs to learn. For example, most autistic-type children understand and enjoy puzzles, but need to build receptive language, including prepositions. The teacher might thus design activities where puzzle pieces are hidden in familiar places around the room. The child's first task is to understand that the teacher's words are explaining the location of the piece. If the child does not understand the language, the teacher would add a non-verbal cue (e.g., a point). For some children, just following a finger point is a real accomplishment. As each puzzle piece is located, it is placed into the puzzle. Thus the child can at least succeed at one aspect of the task, and the purpose of the task (find the pieces) is clear to the child. Once the child comprehends the task sequence, the content of the language can be changed to address the concepts the child needs to master. The teacher would be careful to intersperse locations that are familiar to the child with more difficult to understand locations. For many children, we would also incorporate a role reversal component into the activity--thus (in this example) asking the child to hide some pieces for the teacher to find. Many times autistic-type children are in teaching situations where they are continuously asked to respond. Often this makes it virtually impossible for them to learn to initiate--and initiation is obviously a necessary component of social interaction. Role reversal, even at the non-verbal level, is a necessary component of a successful socialization program.

Toward the end of his first year of participation in our program, Michael understood language and communicated fairly adequately with adults. Many of his pre-academic skills were within normal limits for a child his age. Peer interaction however, did not spontaneously develop. He continued to hit and kick other children. One way of interpreting his behavior was that he did not understand social interaction and thus he responded with inappropriate behavior. Our staff was confronted with the dilemma of how to teach spontaneous interaction between children who did not interact spontaneously.

Michael functioned in most areas at a higher level than the other children participating in our program at the time. An opportunity arose which enabled us to bring a child into our diagnostic classroom with language functioning and socialization needs that were similar to Michael's. David was a child attending a nearby school district; our staff was providing consultation services to him at his school. Like Michael, he had developed well in terms of communication and pre-academic skills, but his school staff was having difficulty finding ways to promote interaction with the other children in his class.

Our staff decided to approach teaching peer interaction from the aforescribed perspective taking what the children understood and enjoyed and using it to teach them what they needed to learn. In this case what they needed to learn was peer interaction.

Both David and Michael enjoyed puzzles. Working separately, each child's teacher developed a game where puzzle pieces were sent across the floor in a truck. The teacher would roll the truck to the child and ask the child to send her a specific piece. The child would send the truck back to the teacher with the requested piece inside. Then each teacher and child reversed roles. The child had the empty puzzle board and the teacher had the puzzle pieces. After the children thoroughly understood the structure of the game the teachers and the children sat across from each other and the teachers assisted the children in playing the puzzle-truck game together. The next day, the two children were left alone in a room with the puzzle and a truck. Their teachers observed their behavior from behind a one-way mirror. Rather than hitting and kicking each other, they played together with the materials for at least 15 minutes. Their language and play was quite stilted and resembled the interactions they had been taught, but there were occasional spontaneous variations that they added on their own. The language of both children very much resembled the teacher language they were so used to hearing: "Is this a duck?" "No, it's not a duck, it's a bear." etc., but they did maintain some kind of back and forth communication. Similar activities using other materials were designed and taught to the children separately before they were placed together with similarly favorable results. Videotaped records were kept of these activities so that the teachers could study the language interaction patterns and have records of the changes that took place over time.

As autistic-type children develop to the point of imitating and communicating, in order to develop socially they need the opportunity to observe and interact with children who do play appropriately. One way of addressing this need is often termed "backwards integration" or borrowing

children from a regular program and designing activities to promote interaction with the autistic-type child. A second means of addressing this need is to place the autistic-type child in a mainstream setting. For either approach to be effective the child needs to be afforded enough individual guidance and support to benefit from the situation but not so much support that he becomes dependent on the assisting adult.

When Michael left our program at age five he was placed half days in a regular kindergarten with the support of a management aide who was trained to facilitate his integration in the group. The initial overall goal of his kindergarten placement was to teach him to try to do what the other children were doing when they were doing it. Michael soon was independently participating in a variety of activities but he had difficulty playing with the children during free play. Indeed there was so much stimulation and activity and so little structure during free play time that he returned to an activity that had virtually disappeared from his repertoire. He began to wander around the room flapping his arms unless his individual aide intervened and helped focus his attention. Michael also had difficulty following the teacher's directions for academic activities although he easily had the skills to complete most of the tasks when given directions by his individual aide. The dilemma once again was how to teach independent free play and independent group functioning.

The approach taken by Michael's school was to set up small group activities during the other half of Michael's day that were designed to teach him how to learn in a group. As Michael's independent functioning improved in the small group situation, he began to function more independently in the large group kindergarten. Once again instead of deciding how to intervene after Michael had difficulty in the group, situations were designed to teach him the skills he needed to avoid the difficulty.

CASE STUDY NUMBER FOUR: PETER

Peter was initially referred to our program at age ten by his local school district four years ago. During his early years Peter attended a program that taught him language by using a strict contingency system where he was required to produce verbal responses to obtain food and other desired objects. At ten years of age Peter was able to name a large number of familiar objects and respond to such questions as "What's your name?" with carefully memorized answers. Other than naming, labeling, and responding to routine questions, Peter's language was primarily echolalic. During his early schooling, Peter also learned a variety of other skills: He read quite fluently at a second grade level and he counted out loud to 100. However, he could not follow any written instructions, despite his reading ability and was not able to understand a simple story. He also did not demonstrate an understanding of quantity. He was a generally compliant child who was prone to severe tantrums whenever his school or home routine was changed or an effort was made to get him actively involved in a group activity.

When Peter was referred to our program, our main concerns were whether Peter's rote language and skills represented his handicap alone or whether it was a combination of the nature of his handicap and the years of repetitive teaching which had ingrained his tendency to memorize tasks and repeat responses without understanding their meaning.

Our program staff worked with Peter indirectly, as consultants to his public school. He attended a resource room program in a mainstream building designed primarily for mildly handicapped children. He had a Learning Disability tutor assigned to work individually with him for two hours per day. As consultants, our main emphasis was on helping to modify the teaching techniques used in order to find ways to more effectively build meaning into the skills that Peter had demonstrated. For example, Peter read aloud quite adequately. However, he would begin to self-stimulate (flap his arms) when working on comprehension questions. Staff were addressing the self-stimulation by offering Peter a piece of candy if he kept his hands still while working. Our staff looked instead at the content of the activity assuming that the self-stimulation appeared because Peter was unable to understand or process the meaning of the task he was being asked to do. Peter's general approach to the questions presented after reading was to circle a response and look at the teacher. If told that the response was incorrect, he would erase that response and circle another. He did not seem to understand the story he had read nor to comprehend that the questions were related to the story. The problem for Peter seemed to be that he missed the point of reading; i.e., to him the purpose of reading was to word call, not to gather information or understand a story. He seemingly did not know that there was anything to comprehend.

Our staff suggested that Peter's school back up the clock by throwing out the reading textbook and building meaning via language experience stories: writing down activities that Peter enjoyed, then doing them, then creating comprehension questions around these activities that Peter had actually experienced. Our staff happened to be observing the day Peter caught on for the first time to the fact that written sentences had meaning. Peter had just returned from a field trip at the zoo. The comprehension question read:

"I saw the animals at the

(a) house (b) school (c) zoo

Peter responded: "house, No; school, No; zoo, Yes" and circled (c) with a big smile on his face. Once he had accurately responded to this question, he began to show more comprehension of other reality-based stories. In fact, while his comprehension still lags behind his ability to word call, it had improved on standardized measures at least one year each year. Thus the problem for Peter was not that he could not comprehend, but rather that he did not understand that there was anything to comprehend.

Similarly, Peter tended to use toys and educational materials in a repetitive way when presented with them. When left to himself and not directed to participate in a specific activity or perform a specific task, he would isolate himself and self-stimulate on the window ledge. Here, again, his school had been addressing the self-stimulation rather than the fact that Peter did not play creatively or understand how to initiate activities or interactions. New objectives were set along the lines of teaching Peter to use materials in more than one way. Also, since Peter understood behavior charts, a chart was set up on which he was given stars each time he initiated an activity during free time and each time he approached a group of children playing. His reward when he had ten stars was to choose another child and go down to the video room and watch a movie. As Peter caught on to initiation and playing, he began to spontaneously

occupy his own time more constructively both at home and at school. The interesting phenomenon here is that the toys he initially preferred were toys for toddlers. As his play matured, he began to show an interest in pre-school educational materials. Gradually he has grown interested in kindergarten and first grade games. As might be expected, he has developed a special liking for battery-operated computer toys and spells far beyond grade level on the "Speak-N-Spell." Here again, when Peter began playing, he needed to back up the developmental clock to re-learn how to play and to pick up skills he had missed when he was a toddler. Once he gained those skills his play progressed at a fairly normal rate. Also, his self-stimulation decreased markedly when he learned to occupy his own time with more appropriate activities.

As Peter learned to be more flexible in terms of using materials, he simultaneously became more able to tolerate changes in routine. Also, as he learned to comprehend the meaning of activities, his understanding and use of language improved. He began to use words rather than behavior to control his environment and, as he understood explanations and could tolerate group participation, his tantrums disappeared. Today Peter remains a language handicapped youngster who functions quite adequately in a large group EMH program in a mainstream junior high building. He continues to make more than a year's progress each year in the areas of language, socialization and academics.

CONCLUSION

The purpose of this paper was to present an overview of an intervention approach that attempts to facilitate the development of spontaneous language and socialization in autistic and autistic-type children. The approach attempts to integrate the teaching of communication and interaction within a developmental framework that initially emphasizes teaching the child how to learn utilizing trial and error and the assistance of nurturing adults rather than repetitively training isolated specific attending skills and task responses. Also emphasized in this paper is the use of intrusive play as an intervention medium which attempts to build meaning and enjoyment into activity sequences geared toward promoting the development of meaningful language and skills. In terms of specific teaching strategies, this paper highlights the following:

- the importance of using materials in multiple ways as a prerequisite to the development of trial and error learning, exploratory play, and generalization.
- the importance of emphasizing "active dependency" before independent skill mastery for the development of communication as well as for teaching the child who to learn from.
- the importance of looking at behavior from many perspectives and gearing the intervention toward teaching the child how to cope in alternative ways or changing the teaching situation so that the activity is more meaningful/less frustrating for the child; the paper emphasizes that before the child is socialized, programming that applies specific consequences after specific behaviors occur may ingrain the behavior.

- the importance of "parallel talk," role reversal, and teaching the child to use language in order to control spontaneous communication in the building.

The approach described in these pages is generally effective in promoting the development of communication and socialization to varying but significant degrees in most of the younger children referred. Some of the children who participated in the program as toddlers are now in mainstream settings with minimal support; the majority need more specialized help but are able to understand, communicate, interact, and enjoy learning. Children referred at older ages for consultation also generally improve behaviorally and cognitively in ways that are important to them, their families, and schools. However, our program is also intermittently referred children who do not show growth in response to recommended strategies. There are quite frequently children with ongoing neurological interference who have not responded to medical treatment nor to alternative educational programming. The question for our staff then becomes a philosophical one that calls into question the entire accountability system that equates successful programming with child growth; indeed it calls into question the societal values that equate success with change. Is it fair that parents and teachers should forever strive for changes that may not be possible to achieve for reasons that are beyond external control? Over the years our staff has developed a philosophy that in these situations perceives enjoyment as a priority goal and in the cases of these severely neurologically impaired children we may suggest that a primary objective may be to enable the school and family to understand the nature of the child's handicap, reduce their guilt over the child's lack of growth, and help them to enjoy the child perhaps by setting a measurable objective that reads: to increase the frequency of the child's spontaneous smiles.

Behavior Management of Autistic and Autistic-like Children and Youth

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BEHAVIOR MANAGEMENT OF AUTISTIC AND
AUTISTIC-LIKE CHILDREN AND YOUTH

Richard L. Simpson

Subsequent to Kanner's (1943) identification and description of autism have been a myriad of judgments, reactions, positions and perceptions regarding the condition (Neel, 1979; Rimland, 1971; Rutter, 1978). Included have been attempts by theoreticians and practitioners to develop reliable descriptors of the syndrome (Ritvo & Freeman, 1978); determination of etiology (Campbell, Hardesty & Burdock, 1978; Folstein & Rutter, 1977); educational and treatment strategies (Almond, Rogers & Krug, 1979; Campbell & Cohen, 1978; Rincover, 1978); and a variety of other matters (Barry & James, 1978; Cantwell & Baker, 1978; Torisky, 1978). In addition, and perhaps most significantly, attention has been focused on identifying efficient and effective behavior management strategies and methods (Foxy, 1977; Hung, 1978; Margolies, 1977). Because the behavioral manifestations associated with the syndrome are so salient (Wing, 1978) it can be expected that this topic will continue to dominate the interest of practitioners and researchers in the future.

While autistic and autistic-like children and youth* do not represent a homogeneous group, particularly in the manner in which they display their behavioral pathology, there are a number of common characteristics of this population. Included are abnormalities of social interaction, self-stimulatory behavior and marked overactivity. Rendel-Short (1978) noted 14 patterns of behavior which may be seen in autistic children and adolescents, including:

1. Difficulty mixing with other children. Autistic children often appear to be uninterested in other children, show no desire to interact, and appear to prefer social isolation. This behavioral trait is also seen when autistic children interact with adults. When required to respond to an adult, they do so in a mechanical, inattentive manner.
2. Acts deaf. Frequently autistic children are thought to be deaf because they show no reaction to noises. Even loud noises fail to startle them or, in some cases, to even attract their attention.
3. Resists learning. Autistic children often show no signs of learning, have no motivation to learn or engage in learning activities, and often actively avoid these activities. Moreover, they refuse to model activities such as hand clapping which are easily imitated.

*While the author recognizes that there are subtle differences between children and adolescents who are autistic and autistic-like, the forthcoming discussion will not discriminate between the two groups.

4. No fear of real dangers. Because they are oblivious to their environment, autistic children often fail to recognize real dangers that might confront them. Examples of this type of behavior might include walking into the street without regard for oncoming traffic or walking along high ledges without showing any caution or fear of height.
5. Resists change in routine. Autistic children often become very upset, even to the point of a full-blown temper tantrum, with even a minor change in routine. Changing the time of a scheduled activity, changing the routine before bedtime, or moving the furniture are examples of changes which might upset an autistic child.
6. Indicates needs by gestures. Frequently, autistic children use gestures instead of spoken language. For example, they may point to a desired object or take an adult by the hand to lead him/her to what they want rather than making a verbal request for the desired object.
7. Inappropriate laughing or giggling. Many times autistic children laugh for no apparent reason. This characteristic is often seen while they are engaged in a task.
8. Not cuddly. Very often autistic children show no response to contact from others or even actively resist cuddling or hugging by pulling away.
9. Marked physical overactivity. Autistic children are often hyperactive. Overactivity may take the form of strange behaviors such as hopping like a frog, running in circles, or jumping up and down while screaming or hand flapping.
10. No eye contact. This behavior is another component of autistic children's tendency to avoid others. It often accompanies social isolation.
11. Inappropriate attachments to objects. Autistic children frequently become so attached to an inanimate object that they refuse to let it out of their sight or grasp. Such attachments are developmentally inappropriate or the object may be an unusual object not appropriate as the basis for attachment, such as a leaf or a blade of grass. The object might also be something which is easily twirled or spun.
12. Spins object. Autistic children frequently attempt to spin or twist a variety of objects and persevere on spinning these. Not only do they spin objects such as books, pencils or toys, they may also become fascinated by objects which naturally twirl, such as water twirling down a drain or toilet.
13. Sustained odd play. Autistic children often engage in odd, non-constructive play activities, such as pacing up and down a fence or throwing objects into the air over and over again to watch them

fall to the ground. It often appears as if they do not know how to play properly.

14. Standoffish manner. This characteristic is related to autistic children's general tendency toward isolation. They do not approach others or may even actively avoid others.

The noteworthiness of these often observed patterns of autistic and other severely emotionally disturbed children and youth underscore the necessity of educators and other professionals being equipped with effectual and practical behavior change and social development strategies. Further, since these patterns involve highly aberrant and erratic responses, as opposed to socially determined excesses and deficits of essentially normal behavior, management methods applicable with mildly handicapped pupils may have only minimal efficacy with autistic groups.

Yet, in spite of the challenge of autistic and autistic-like pupils to educators and other professionals, there are procedures which have been proven effective. Included is behavior modification, a strategy unquestionably efficacious in effecting planned response pattern changes of severely emotionally disturbed pupils. The technology of operant conditioning and other behavioral procedures has been successfully employed in a variety of settings and with a number of different problems. Included have been programs to decrease aggressive behavior (Brown, Pace & Becker, 1969; Noll & Simpson, 1979); social withdrawal and isolation (Koegel, Firestone, Krammer & Dunlap, 1974; Strain, Kerr & Ragland, 1979); develop functional speech and language (Kerr, Meyerson & Michael, 1965; Risley & Wolf, 1967; Wheeler & Sulzer, 1970); reduce self-injurious behavior (Repp & Deitz, 1974; Tate & Baroff, 1966); modify self-stimulatory responses (Foxy & Azrin, 1973; Newman, Whorton & Simpson, 1977); and manage a number of other behavioral excesses and deficits (Ando, 1977; Simpson & Sasso, 1978). Further, such procedures have been used by both parents and professionals (Koegel, Glahn & Nieminen, 1978; Risley, 1968) and with a variety of age groups (Birnbauer, 1968; Plummer, Baer & LeBlanc, 1977). Clearly, the approach is a versatile and functional method of managing the behavior and facilitating learning in autistic and autistic-like children and youth.

ASSUMPTIONS OF THE BEHAVIORAL APPROACH

A behavioral strategy to conceptualizing and modifying the behavior of severely emotionally disturbed children and youth is appropriate and effective only when users of the approach comprehend the principles and assumptions underlying the model, e.g., most human behavior is learned; comprehending and manipulating observable stimuli and behavior are of paramount concern; diagnostic labels may be independent of treatment procedures; the utility of intervention methods is judged empirically; and operant behavior is determined by antecedent and consequent events.

Most Human Behavior is Learned

According to this basic principle of the behavioral model, the aberrant behaviors of autistic and autistic-like children and adolescents are learned and, in fact, are developed and maintained in much the same manner as are more adaptive responses. Hence, according to this tenet,

most operant responses, whether they be an adaptive behavior such as completing a task in a classroom setting or a socially maladaptive behavior such as ignoring adult commands, are learned and controlled by the same behavioral principles. The implications of this assumption for educators are significant: First, it permits planned change to take place via the "unlearning" of inappropriate and nonfunctional behaviors and replacing these with more socially appropriate responses. Second, this perception of behavior eliminates the argument that autistic children manifest unusual and nonfunctional behavior exclusively as a function of unobservable or uncomprehensible events or that educators are ill-equipped to manage the behaviors of these handicapped individuals.

Comprehending and Manipulating Observable Stimuli and Behavior are of Paramount Concern

Behavioral intervention programs involve the systematic application of learning theory principles to modify the occurrence of specific operant patterns. In order to effectively use the technology and to evaluate the effects of an intervention program, a specific target behavior must be selected for change. If, for instance, a teacher or paraprofessional were to focus on solidifying the "ego boundaries" of a severely emotionally disturbed child, he or she would most likely experience difficulty not only in obtaining agreement on the nature and meaning of the objective, but also in assessing the effectiveness of a given intervention program. However, by focusing on a specific, observable behavior, such as maintaining eye contact during interactions with another person, the concept of ego boundary enhancement may be translated into a form that is amenable to change through a behavioral approach.

The behavioral models' emphasis on observable responses and stimuli allows for the selection of functional procedures and directly relevant methodology. That is, the assumption is made that a specific operant response is not a by-product of a broader, unobservable problem (e.g., limited ego integration, unresolved anger, etc.), which will be remediated only after the original and underlying issue is resolved. Rather, the specific behavioral excess or deficit is the most salient consideration. Consequently, the behavior manager disregards nondirected intervention considerations (e.g., attempts at integrating a child's ego for the purpose of improving eye contact) in favor of direct intervention for a specific problem. While a child's ego might, in fact, become more integrated as a result of behavioral technology, the primary intent of any program effort is to modify an observable and measurable behavioral response pattern.

The emphasis on observable stimuli and responses is also associated with the principal of behavior modification that operant responses are developed and maintained by observable environmental events which precede and follow a response. That is, this principle further emphasizes those events and stimuli which can be observed, monitored and potentially modified, and which are a part of a child or youth's situational present rather than their historical past. Accordingly, this model component offers further assurances that educators providing intervention services to handicapped persons will not lose sight of their primary mission.

Finally, the pragmatic nature and practicality of the behavioral strategy allows for the application of these principles of paraprofessionals, parents and other individuals who interact with severely emotionally disturbed individuals. Hence, the applicability of the model is extended beyond a single environment or educational setting. Psychotherapeutic and similar intervention approaches, on the other hand, rely on esoteric and technical procedures which emphasize unconscious and unobservable phenomena and which are not particularly amenable to transfer. As a result, often such methods can only be applied by clinicians and other highly trained mental health workers.

Diagnostic Labels may be Independent of Treatment Procedures

A basic strength of the behavioral approach is that the methodology may be applied to the problems of a given pupil without requiring that the individual first be differentially diagnosed or labeled as autistic, schizophrenic or something else. Rather, the focus of the procedures is on the identification and analysis of those observable and measurable behavioral problems which are interfering with adjustment, and the application of methods of assisting a pupil in acquiring more adaptive behavior. Because behavior modification accentuates observable behaviors, as opposed to labeling the individual manifesting the pattern, educational and other treatment personnel may use the procedures without becoming overly involved in the time consuming and often irrelevant issues of differential diagnosis and labeling. The fact that educators and other professionals responsible for the education and treatment of severely disturbed pupils are primarily interested in promoting appropriate behavior, as opposed to selecting an acceptable label, makes the approach all the more functional. In summary, this strategy combines the advantage of restricting the use of potentially pernicious labels with functional and pragmatic problem-solving alternatives.

The Utility of Intervention Methods is Judged Empirically

This significant tenet of the behavioral model requires that the utility of a given behavioral procedure be individually determined through precise measurement methods. Accordingly, no behavioral intervention strategy is assumed to be effective or functional without systematic evaluation procedures.

Hall, Hawkins and Axelrod (1975) commented on the advantages of careful measurement and empirical validation as part of the application of behavior modification procedures. In part they noted:

- A. Measurement forces the teacher to define target behaviors more precisely.
- B. It (measurement) results in a precise assessment of performance that is a more relevant form of diagnosis than most psychological testing.
- C. It focuses the teacher's efforts on the specific behavior and, thus, is more likely to achieve the desired changes.

- D. The frequent--usually daily--measurement and charting of data on a graphic record encourages the teacher to persist with the technique until its effect is adequately tested, rather than to give up when immediate and obvious results cannot be seen.
- E. With frequent measurement, the teacher is stimulated to make small improvements in his technique and to note the effects; the final form of the technique achieved may be much more effective than the original.
- F. Measurement increases the likelihood that a teacher will apply a planned technique consistently and exclusively; often teachers who do not measure behavior will contaminate a promising technique by introducing other procedures along with it or vacillating between it and one or more other techniques that counteract its effect. (Hall et al., 1975, pp. 195-196)

Operant Behavior is Controlled by Antecedent and Consequent Events

According to this component of the model operant responses are developed and solidified in accordance with stimulus events occurring before and after their occurrence. That is, the operant behavior of autistic and other severely emotionally disturbed children and youth is a function of stimuli which promote its occurrence (Patterson, 1974) or follow a response (Skinner, 1953). Such environmental events may take the form of stimulus cues, reinforcers, punishers or extinction procedures. The relevance of this model assumption is that, if the environmental stimuli associated with a particular behavior can be identified and manipulated, behavioral patterns may be systematically modified.

THE APPLICATION OF THE BEHAVIORAL MODEL WITH AUTISTIC PUPILS

While the present section will provide a cursory overview of the procedures associated with developing and implementing a behavior management program, it is imperative that readers recognize that the success of any application will be a function of the skill with which the various components of the technology are applied and the level of rapport, communication and understanding existing between the behavioral engineer and the pupil under treatment. Hence, despite the proven utility and efficacy of the model, behavioral engineers lacking in sensitivity and empathy with exceptional children can be expected to be unsuccessful in the application of any intervention procedure. Without suitable attention to interpersonal factors educators of autistic and autistic-like pupils will meet with limited success regardless of the skill with which they apply the technology.

Finally, professionals who plan to apply behavioral procedures with their pupils must have a clear and thorough understanding of applied behavior analysis methods. Persons who do not possess such background knowledge are encouraged to supplement the present work with more fundamental information.

TARGETING AND DEFINING A BEHAVIOR FOR CHANGE

An initial step in the use of behavioral procedures is to identify and operationally define a response pattern considered to be aberrant, excessive or deficient. While behavioral principles are quite versatile, they are functional only to the degree that they are used with observable and measurable behaviors that have been precisely defined. Further, behaviors selected for modification must be so clearly identified that the various individuals involved with a pupil (e.g., teacher, psychologist, paraprofessional) are able to view and judge the pattern in the same manner. For example, "inappropriate giggling" to one educator might consist of uncontrolled laughter; to somebody else it might mean a high-pitched sound made by an agitated child. Accordingly, it is mandatory that all participants in a behavior change program have a common perception and definition of the target behavior.

Further, educators involved in behavior management programs must consider several other matters. First, they must determine whether a behavior under consideration for modification is under a pupil's control. Behaviors such as self-abuse, non-compliance, or social withdrawal are usually under a child's control; however, parasympathetic functions such as heartbeat rate, hyperventilating, or similar responses are probably beyond their control. A means for determining whether a response is under an individual's authority and thus, the type of intervention program suitable for use, is to judge whether the behavior under analysis precedes or follows a particular stimulus. Respondent behavior, or patterns developed through classical conditioning (Shoben, 1948), are elicited by stimuli; that is, the appearance of certain environmental stimuli create a response. Classical conditioning involves a wide variety of involuntary responses, including those associated with the functioning of bodily organs and glands. For example, a child who hyperventilates in the presence of a particular adult is probably demonstrating respondent behavior. In most cases such behaviors are a function of environmental events which take place prior to the occurrence of the identified response. Operant behaviors, on the other hand, are developed and maintained by environmental events which are subsequent to their occurrence (Bandura, 1969). That is, operant behaviors, exemplified by such responses as talking, walking, task completion, aggression and tantruming, are a function of the events which come after them. An adolescent may be willing to demonstrate appropriate classroom behavior in order to receive a particular reward; or a child may bite his wrist or hand in order to obtain adult attention.

Since the correct use of behavior modification is based upon an accurate understanding and manipulation of the controlling environmental stimuli, behavioral engineers must be able to discriminate between the two major classes of behavior. That is, intervention methods will be dependent on whether or not a pupil has control over the behavior under scrutiny and the nature of the environmental events associated with it.

While both respondent and operant behaviors must be of concern to professionals involved in educating and treating severely emotionally disturbed pupils, it must also be recognized that many of the behavioral patterns of these pupils which are suitable for modification are operant in nature and that intervention programs which focus on behaviors that

are under a child's control tend to be more successful. For these reasons, the present discussion will focus on methods and procedures for modifying operant responses.

Behavioral intervention procedures also tend to be most effective when (1) applied to behaviors which contain movement; (2) applied to behaviors which occur on a regular basis; and (3) the pattern selected for change has a precise starting and ending point. Identification of response patterns for modification meeting these criteria increases the reliability of observations and, thus, the behavioral engineer's capacity to evaluate the utility of any treatment variable. Accordingly, target behaviors such as physical aggression, screaming, self-stimulatory toe-walking, and non-compliance are more suitable for management programs than sleeping or "staring in a psychotic manner" because they contain movements which (1) can be easily observed; (2) may be repeatable; and (3) have specific starting and stopping points. Appropriate attention to these rather basic factors will often determine the success or failure of a behavior management program.

In addition to focusing on operant excesses and deficits which are in need of modification, individuals applying behavioral principles must also evaluate the strengths of the pupils with whom the technology is to be applied. Such a comprehensive evaluation of a child aids in establishing a more realistic understanding of the subject and his or her problems. Accordingly, rather than viewing a pupil as "autistic" or as an individual who engages in bizarre behavior, he or she must be perceived as a person who also has certain positive patterns. This strategy, in addition to providing a thorough assessment of a subject, also aids in the identification of possible reinforcement contingencies. For example, if a teacher or parent observes that an otherwise highly aggressive adolescent tends to be calm and compliant when listening to a stereo, use of this adaptive pattern may be successfully incorporated into an intervention plan.

A final matter to be considered when targeting a response for modification is the importance of selecting a behavior that has a high probability of being changed. That is, while consideration should not be given to insignificant issues, care should be taken, particularly initially, to select a target response which has a good chance for positive change. For example, an eleven-year-old autistic child with no functional language may not respond quickly to an operantly based language development program and thus may be more suited for having other responses dealt with. Hence, at least initially, modification of responses which have proven unresponsive to other treatment procedures should be delayed in favor of behavioral patterns which have a better chance of success. Once professionals have determined a pupil's response to behavioral intervention strategies and have clearly established the validity and efficacy of their technology, more challenging response patterns can be dealt with.

ANALYZING SETTINGS AND CIRCUMSTANCES

As one component of gaining an understanding of a target response, the behavioral engineer must be able to understand the settings in which a behavior occurs and the circumstances associated with it. Bersoff and Grieger (1971) observed that "obtaining knowledge about environments and situations in which the behavior appears is a necessity" (p. 487). In

particular, it is necessary to determine whether a behavior under analysis occurs primarily in certain settings or under particular conditions (e.g., on the playground during afternoon recess, in the classroom during group exercises) or whether the behavior is pervasive across environments and situations. Obviously, a number of variables influence children's behavior, an understanding of which is essential to any intervention program. Hence, the accurate identification of settings and circumstances surrounding a particular behavior must also involve an evaluation of those individuals who experience and who are associated with such response patterns. That is, an analysis must be made of whether a pupil only displays the target behavior in the presence of a limited number of individuals (e.g., only one of his teachers, the school custodian) or in a more generalized manner. As suggested by Bandura (1969), "under naturalistic conditions behavior is generally regulated by the characteristics of persons toward whom responses are directed, the social setting, temporal factors, and host of verbal and symbolic cues that signify predictable response consequences" (p. 25).

ANALYZING CONTINGENCIES

As mentioned earlier, both the adaptive and maladaptive operant behavior of autistic and autistic-like children and youth is thought to be controlled by environmental stimuli (Skinner, 1953). Accordingly, the behavioral engineer must be able to identify relevant antecedent and consequent events associated with a particular target behavior. While it is obviously unrealistic to expect behavioral engineers to have a complete understanding of the medley of variables influencing the behavior of severely emotionally disturbed pupils, it is possible for them to be able to identify major factors associated with certain behavior patterns. Included should be attempts to evaluate environmental stimuli which inform a pupil that conditions are correct for a display of a certain behavioral pattern as well as those environmental events which are subsequent to the behavior. Since it is assumed that the operant responses of severely emotionally disturbed pupils are a function of the consequences which follow them, a thorough evaluation of the contingencies associated with a target behavior must be made.

BEHAVIORAL OBSERVATION

Accurate measurement and analysis efforts are necessary if behavioral engineers are to gain a thorough understanding of an operant response and its antecedent and consequent conditions. Further, this basic feature of behavior modification is the sole means of determining whether intervention procedures are associated with changes in behavior.

While a number of options exist for obtaining baseline (a preintervention record of a behavior) and experimental intervention data (a record of the behavior following the application of an intervention consequence), observational methods are typically the most functional. Hall (1970) identified five observational options including continuous, event, duration, interval and time sampling.

Continuous observation involves keeping anecdotal records of a pupil's behavior over a set period of time. While this observational option provides an opportunity for educators to see a variety of behaviors, it

typically lacks reliability and requires an inordinate amount of time and effort. As a result, continuous observations are typically a poor observational alternative.

Event recording involves an analysis of the frequency with which a child engages in a particular response pattern. This observational approach is frequently the most efficient and reliable means of observing and recording a behavior.

Duration recording requires the educator to assess the amount of time a pupil engages in a specified response over a set period of time. This observational option is most suitable when the length of the occurrence of a response is the most important consideration. For example, a determination of the number of minutes a child is involved in a particular self-stimulatory behavior may be more functional than knowing the frequency of the pattern.

A fourth observational approach, interval recording, involves dividing a predetermined period of time into equal segments. The measurement process involves determining whether a particular behavior occurs during each of the intervals. Interval systems allow observers to simultaneously assess a variety of responses.

Time sampling, a system similar to interval recording, has the advantage of not requiring the observer to continually observe. An educator records whether a pupil is involved in a particular response at the end of a set time interval. Thus, for example, a teacher might observe a child's social interactions over the course of one hour per afternoon, noting at the end of each five-minute period whether the child was involved in an appropriate activity with a peer. This observation alternative provides a means of securing a reliable sample of behavior while allowing educators to be involved in other activities.

Since the accurate assessment of any target response is a salient component of effective utilization of behavior modification, sufficient attention must be given to this process. Specifically, care must be taken (1) to obtain a clearly defined and universally understood operational definition of a target response; (2) to develop a thoroughly understood measurement procedure, including specified times when recordings will be made and procedures and materials to be employed in securing the data (e.g., kitchen timer to be used between 3:00 and 4:00 p.m. in a time sampling program); (3) graphing and charting methods to be used in displaying the data; and (4) methods for securing reliability.

Even though measurement methodology may be among the most fundamental parts of any behavior modification program, its importance to the overall accuracy and integrity of a program must be acknowledged.

DESIGNING INTERVENTION PROCEDURES

The maladaptive operant behavior of autistic and autistic-like children and youth can effectively be modified by the systematic manipulation of consequences. While the selection of potentially effective consequences is not an easy task, neither is it beyond the bounds of

possibility. Through observations and discussions with pupils, their parents and the various individuals involved in their education and treatment, potentially effective intervention procedures can be selected. In this regard, it is essential that educators be reminded that the value of any intervention procedure must be empirically decided. That is, in order to evaluate the efficiency of a consequence, it is necessary to assess its influence on the behavior it follows. Hence, continuous and accurate measurement procedures must constitute a basic component of any behavioral intervention program.

Possible intervention options include reinforcement programs, extinction procedures and punishers. In addition, antecedent stimuli may be manipulated to effect a change in behavior.

REINFORCEMENT PROGRAMS

Functionally, reinforcers increase the probability of the occurrence of a particular behavior. Such an increase may occur in one of two ways. First, behaviors which are followed by a reinforcing stimulus tend to be repeated. For example, an adolescent who significantly increases his academic productivity as a result of receiving verbal praise can be assumed to be positively reinforced by the contingent application of this consequence. Secondly, a response can be accelerated by the removal of an aversive stimulus (negative reinforcement). For example, a child may be excused from participating in a particular academic task if his playground social behavior meets certain criteria. In the event that this program results in a significant increase in positive social behavior on the playground, the contingent removal of the academic activity can be considered reinforcing for the child. While negative reinforcers may result in planned response changes, it is recommended that they be conservatively employed, since positive reinforcement procedures can usually achieve the same goals while having obvious interpersonal advantages. Hence, negative reinforcement should be considered only after positive reinforcement programs have not achieved desired results.

Specific reinforcement programs found to be successful with autistic and autistic-like children and youth include social reinforcers, tangible reinforcers, activity privileges and idiosyncratic consequences.

Social reinforcers, while frequently underestimated in importance, can be extremely effective with some autistic pupils. Among those social reinforcers that have been successfully employed are supportive verbal and nonverbal responses made contingent upon pupils responding in a particular fashion. Without question, positive adult attention given contingent on particular behaviors can influence some behavior (Ando, 1977; Parks, 1976).

Tangible reinforcers have also been effectively used with autistic and other severely emotionally disturbed children and adolescents in a variety of settings (Kaufman & O'Leary, 1972; Hung & Thelander, 1978). Tangibles may include edibles dispensed for specified behavior (Lovaas, Freitas, Nelson & Whalen, 1967); token programs, whereby backup reinforcers are exchanged for tokens earned for appropriate behavior (Bonvillian & Nelson, 1976; O'Leary & Drabman, 1971); and other methods for rewarding

pupils with tangibles for engaging in specified behavior (Rister & Wolf, 1967).

Contingent activities have been found to be an efficient functional means of achieving specific goals with psychotic and autistic individuals. In particular, pupil's behavior has been successfully modified by making certain activities (e.g., free time) contingent upon particular types and levels of operant behavior (Marsalies, 1977; Mitchell & Stoffelmoyr, 1973).

Finally, a variety of idiosyncratic reinforcers have been employed to promote specific types of behavior. Since environmental stimuli capable of influencing individual students and behaviors vary from individual to individual, it is not surprising that certain highly individualized consequences have been found to be effective. Contingent music to promote appropriate speech (Deutsch & Parks, 1978), tactile stimulation (Clements & Tracy, 1978), self-stimulation (Hung, 1978), and other diverse stimuli and conditions have been effectively applied with individual children and adolescents to effect planned behavior changes.

Extinction

This operant conditioning procedure which is used to decrease maladaptive responses involves the cessation of previously provided reinforcement. That is, attempts are made to decrease the probability of a response by eliminating whatever contingent reinforcement is thought to be maintaining the patterns. For example, based on the principles of extinction, a child who chronically is aggressive toward adults, allegedly to secure teacher attention, would be denied contingent reinforcement.

While a number of reports have convincingly demonstrated the efficacy of extinction programs (Williams, 1959; Zimmerman & Zimmerman, 1962), particularly in combination with other consequences, use of extinction involves a number of problems. First, the effectiveness of this operant strategy is dependent upon the ability of professionals to identify and control the reinforcers that are accelerating or maintaining a particular response, a process which is not easily achieved. Accordingly, educators must not only make an accurate analysis of the sometimes numerous sources of reinforcement for a particular behavior, but also gain control over such stimuli. The fact that a pupil may be, at least in part, reinforced for a particular maladaptive response by his peer group, parents or others make the procedure all the more difficult to effectively apply. Second, extinction programs which only gain partial or intermittent control over the stimuli controlling a maladaptive response may actually make the pattern more immune to extinction (Mathis, Cotton & Sechrest, 1970). Accordingly, educators may further entrench a maladaptive behavior if they only gain intermittent control over the maintaining environmental consequences. Third, extinction procedures often result in a short-term increase in the target behavior or the manifestation of other more intense maladaptive responses. For example, if an adolescent with a history of yelling at his teacher, ostensibly for the purpose of attracting attention, is exposed to an extinction schedule it can be expected that his initial response will be to increase the frequency and intensity of yelling in order to obtain the contingent attention that is being denied. At least periodically, autistic and autistic-like children and youth will engage in

such unacceptable behavior that ignoring becomes an unsuitable alternative. Fourth, extinction programs may not be appropriate with certain behaviors such as physical aggression and other highly deviant responses. Further, at least a certain percentage of these pupils will not be manifesting a behavior for the purpose of securing attention. In these instances extinction programs will not be suitable.

Nonetheless, in spite of its weaknesses, extinction must be given appropriate consideration. For instance, Lovaas, Freitag, Gold and Kassorla (1965) used an extinction program to illustrate the power of attention in promoting self-injurious responses and Wolf, Risley and Mees (1964) successfully used an extinction program to eliminate bedtime problems. At the same time however, professionals must determine whether extinction is truly the most desirable option for managing the behavior of autistic and severely emotionally disturbed pupils. This concern is illustrated by the work of Lovaas and Simmons (1969) who reported that while extinction was effective in suppressing self-injury with one child, its effects were dangerously slow.

Punishment Techniques

As with extinction, punishment techniques are designed to decelerate specific response patterns by following them with an aversive stimulus (Mowrer, 1958). While proven to be able to influence behavior, punishers should be used only with significant and potentially harmful responses, and only after other more positive alternatives have been found to be ineffective (Lovaas & Simmons, 1969; Wood & Lakin, 1978). The rationale for such cautious use of punishers is that the decelerating influence of these consequences may undesignedly reduce certain desirable behaviors, and that persons involved in punishment programs may themselves acquire punishing properties.

Yet, when used judiciously and under the correct circumstances, punishment techniques can be a significant component of the educator's repertoire. Of particular significance are response cost programs, time out, over-correction, reinforcing behaviors incompatible with an undesired response, and aversive conditioning.

Response cost or cost contingency consists of removing a reinforcer from a pupil contingent upon the emission of a certain maladaptive behavior. Accordingly, tokens, free time, edibles and other privileges earned for previous appropriate behavior may be withdrawn contingent upon manifesting specific behaviors. Cost contingency procedures are commonly employed in society, as exemplified in most laws and regulations.

Response cost programs have been used successfully under a variety of conditions and with children exhibiting a number of different maladaptive responses (Iwata & Bailey, 1974; Kaufman & O'Leary, 1972; Kazdin, 1972). Interestingly though, cost contingency programs have not been widely employed in treating autistic children. Of the studies involving children or adolescents described as autistic or autistic-like, there have been limited examples of behavior that were suppressed through the employment of response cost programs. Nonetheless, in spite of the paucity of research in this area, response cost systems must be considered a potentially effective means of intervening with autistic and autistic-like pupils.

Time out, i.e., the removal of a pupil from reinforcement contingent upon the display of a maladaptive response, has also been successfully used to decelerate deviant behavior (Noll & Simpson, 1979; Wolf & Risley, 1967). While similar in certain respects to the practice of placing a student in a corner or outside a classroom, appropriately applied time out has several significant differences. First and foremost, rather than making a pupil the center of attention, as in the case of a child who is made to sit in a corner of a classroom, time out involves removing students from positive reinforcement for a specified period of time. For example, a child who displays disruptive behavior may be removed from the reinforcing elements of a classroom contingent upon the display of a maladaptive response. In addition to removing pupils from reinforcing settings, functional time out programs should be structured such that students understand that (1) the time out method is implemented contingent upon specific maladaptive responses; (2) the technique is used only with specified behavior as opposed to globally; and (3) the removal from reinforcement is for brief periods of time.

Time out programs have been implemented in several different ways to decelerate autistic-like behaviors. For example, Ayllon (1963) removed an individual from a dining room for stealing food; Hewitt (1965) darkened an experimental chamber as a consequence for maladaptive behavior; and Liberman, Teigen, Patterson and Baker (1973) terminated an interview whenever a subject exhibited delusional speech.

Yet, while time out procedures have often been utilized with a variety of handicapped children and youth, including autistic populations, there are some suggestions that the procedure may have limited utility in influencing autistic-like responses. There have been some reports, for instance, of autistic pupils failing to respond to time out programs (e.g., Foxx, 1976; Risley, 1968) and Plummer et al. (1977) actually observed that time out served as a reinforcer with a five-year-old autistic girl. Accordingly, even though time out programs have been used successfully with some autistic and autistic-like children and youth, it may be an unsuitable consequence for all such populations.

Overcorrection, a relatively new operant procedure, has been particularly effective with autistic and autistic-like children and adolescents for whom other forms of reinforcement and punishment have failed to decelerate behavior. According to Foxx (1971) and Foxx and Azrin (1973), overcorrection has two objectives: (1) to overcorrect the environmental effects of a maladaptive response, and (2) to require the disrupting individual to practice a correct form of an appropriate response.

The procedure for achieving the first objective, termed "restitutional overcorrection," requires "the disruptor to correct the consequences of his misbehavior by having him restore the situation to a state vastly improved from that which existed before the disruption" (Foxx & Azrin, 1973, p. 2). A child who smears his feces, for example, might be made to wash, clean and wax the soiled area. Positive practice overcorrection is used to achieve the second objective. This component involves the child who smears his feces to practice eliminating in a toilet and then to thoroughly clean himself. It should be observed that restitutional overcorrection is applicable only when a maladaptive response disrupts the

environment. Hence, since responses such as self-stimulatory behaviors do not disrupt the environment only positive practice overcorrection procedures are used.

Without question overcorrection procedures have been widely accepted by educators of autistic and autistic-like pupils, an appeal which may at least in part be attributed to the educational nature of the method (Foxy, 1976). That is, the procedure is not only designed to eliminate a maladaptive response but encourage the learning of an acceptable alternative. While additional work is needed to document the precise educational value of overcorrection it appears to be a logical alternative to methods which eliminate maladaptive behavior without providing the subject with an appropriate alternative behavior.

Simpson and Sasso (1978) employed an overcorrection procedure to decelerate rumination in a ten-year-old autistic-like male. This maladaptive behavior involved the voluntary regurgitation of food from the stomach into and from the oral cavity. Rumination was frequently observed during or shortly after mealtime, although it was not totally confined to those time periods. When the behavior was observed, the teacher would immediately approach the child, open his mouth and squirt a small quantity of lemon juice into his mouth. The child was then told to swallow the juice. The teacher's hand would remain over the child's mouth to aid him in swallowing the juice. Next, the facial area was washed with warm, soapy water for 30 seconds. This was followed by drying his face and then applying a face lotion to the effected area for an additional 15 seconds. This overcorrection procedure completely eliminated the self-stimulatory behavior within one week after treatment was initiated.

The differential reinforcement of behaviors incompatible with the maladaptive response is one of the few punishment procedures which does not involve an aversive consequence. As such it should be perceived as a preferred technique within the domain of punishment techniques. The approach is based on the assumption that reinforcing an appropriate behavior which is incompatible with the inappropriate act will decrease an unacceptable behavior (Zabel, 1981).

The reinforcement of responses that are topographically incompatible with aberrant behaviors has been one functional application of this concept with autistic and autistic-like pupils. For example, Twardosz and Sajwaj (1972) reinforced sitting behavior and observed that abnormal posturing decreased while Mulhurn and Baumiester (1973) reduced the rocking behaviors of two subjects by reinforcing sitting still.

Aversive Conditioning

Whether rightly or wrongly, painful or noxious stimulation has been widely employed to decelerate maladaptive responses manifested by autistic and autistic-like individuals. One commonly used aversive technique has been shock, typically applied to decrease behaviors considered to be dangerous. Tate and Baroff (1966) for example employed shock to eliminate head banging and head slapping by a nine-year-old psychotic boy while Risley (1968) reported that shock was the only consequence which effectively decelerated the dangerous climbing behavior of a six-year-old autistic girl.

Others (Lovaas & Simmons, 1969) have also suggested that aversive procedures such as shock may be beneficial in suppressing dangerous and highly aberrant responses.

Aversive procedures other than shock have also been used to decelerate autistic-like responses. Ayllon and Michael (1959) for instance reduced the incidence of food refusal in a subject by spilling food on him when spoon feeding was required. Koegel and Covert (1972), Koegel and Rincover (1974), and Koegel et al. (1974) used slapping and, in some cases, restraint for self-stimulatory behaviors and Tanner and Zeiler (1975) held an ammonia capsule under the nose of a 20-year-old autistic woman each time she slapped her own face. While debates have continued for some time regarding the appropriateness of these procedures they have played a prominent role in the intervention arsenal of professionals assigned the task of educating and treating autistic and autistic-like populations.

Antecedent Manipulation

As an alternative to the previously described management procedures, antecedent events may be manipulated for the purpose of effecting planned response changes with autistic and autistic-like children and youth. Accordingly, stimulus cues associated with a response may be manipulated in order to induce certain behaviors. Without argument, all individuals who work with children, including those manifesting autistic-like behaviors, have used this common technique, including removing a child from seductive elements in a classroom (e.g., toys in a free time area, etc.) or modifying curricula to promote more adaptive behavior. Yet, in spite of the common usage of this strategy, the manipulation of antecedent conditions can be an efficacious procedure only when used in combination with an accurate understanding of the antecedent stimuli controlling an individual's behavior, and only if these events can actually be controlled. Hence, movement of a child away from a distracting area of a room to reduce "hyperactivity" does not mean that he will not be overly active in other areas; nor does the movement of a pupil next to the teacher's desk to facilitate attention to task necessarily result in positive changes when the basic issue is that the teacher is providing vague and poorly structured assignments.

One stimulus change procedure that has brought about relatively impressive results consists of providing children with appropriate models for specific behaviors (Bandura, 1969). O'Conner (1969) assessed the impact of modeling on the social behavior of preschool children. In this study, six socially withdrawn children viewed a film of a model child observing the social interactions of other children and then joining them, with pleasant consequences. The results of the study revealed that the children who watched the film significantly increased their social interactions. While the overall value of modeling procedures remains an empirical issue it does appear worthy of further investigation.

FOLLOW-UP AND MAINTENANCE

Follow-up procedures are undertaken for the purpose of evaluating the effects of intervention efforts, modifying performance goals and, if necessary, to make procedural changes. While educators and treatment agents

must periodically change intervention procedures, such modifications must not be made impulsively or capriciously. Autistic and autistic-like children and youth may sometimes be slow in responding even to effective programs; it is important, therefore, not to change an intervention too soon even if it does not initially result in behavior change. Any treatment must be given ample opportunities to work. Further, since autistic and autistic-like pupils may have a history of being exposed to unpredictable and erratic conditions, it is important that intervention techniques do not further exasperate the condition.

Finally, educators must provide adequate feedback and reinforcement to other adults involved in any intervention effort. Since classroom aides, ancillary staff, therapists, and other personnel working with children must be supportive and consistent in carrying out any program, plans must be made for providing these individuals with appropriate support and feedback.

CASE EXAMPLES

The forthcoming section will present several examples of intervention programs established with autistic and autistic-like children and youth for the purpose of illustrating in practice the principles and procedures discussed previously.

Case Study 1*

The subject was a ten-year-old Negro male who had previously been diagnosed as autistic-like and functionally retarded and who had been in programs for exceptional children since he was an infant. He was described as "non-verbal, having little or no interest in establishing or maintaining appropriate social relationships and prone to engage in aggressive and self-destructive behaviors." The child was born with a cleft lip and palate deformity which were surgically corrected at the age of 15 months. Frequently observed to engage in self-stimulatory behavior, this child was particularly prone to tooth-flicking. In addition, he was frequently out of his seat without permission during class time.

At the time of the intervention program the child was a student in a federally supported demonstration program for severely emotionally disturbed children. In addition to the full time services of a master teacher and aide, the program was supported by several multidisciplinary staff. Even though the program was associated with a university, it was located in an urban public school which also served nonhandicapped children.

Tooth-flicking was operationally defined as repeatedly bringing a fingernail across the top of a lower tooth to produce a "clicking" sound while out-of-seat was defined as any situation during regular class hours in which the normal seating surface of neither buttock was applied to the child's seat or where there was movement of his desk or chair so that its normal stationary position was altered. Appropriate out-of-seat activities were excluded from this definition.

*These case studies are drawn from the work of Sasso, 1977.

Both behavioral patterns described above were considered to be maladaptive and an impediment to the child making academic and social gains. In particular, baseline procedures revealed a mean daily frequency of 26 for tooth-flicking and 44 for out-of-seat.

Following baseline, overcorrection programs were implemented to reduce the frequency of the previously described target behavior. The program employed to decelerate tooth-flicking and out-of-seat are respectively provided below.

Overcorrection for Tooth-flicking

When observed to be flicking his tooth, as per the definition above, the following procedures were applied:

- a. Immediately after the student engaged in the target behavior, a teacher or aide responded "no" in a bland tone.
- b. The child was next required to brush his teeth with a toothbrush dipped in mouthwash for 60 seconds.
- c. The child was next required to wash the finger used in tooth-flicking for 60 seconds.
- d. Handcream was next massaged on the child's finger for 60 seconds.
- e. The subject was then returned to his desk where three minutes of exercise on the appropriate use of the hands was given. Specifically, this exercise consisted of providing the child with the following directions:
 - (1) "hands in lap"
 - (2) "hands on head"
 - (3) "hands on desk"
 - (4) "hands folded"

These commands were given in random order.

- f. Once the cycle was completed, the student was allowed to return to the task preceding the tooth-flicking episode.

Overcorrection for Out-of-seat

Since this target behavior did not result in environmental damage, only a positive practice procedure was used. The specific components of this program were as follows:

- a. Immediately after the child emitted the target behavior, he was told "No getting out of seat" in a bland tone.
- b. After being led back to his seat, the student was led through a five-minute drill in appropriate in-seat behavior. Specifically, the following drills were conducted:

- (1) "Sit in this chair" (placed next to his desk)
- (2) "Sit in your chair"
- (3) "Sit forward"
- (4) "Sit to the side"

The adult training the child used a different instructional sequence to prevent anticipatory and ritualistic responses.

- c. Following the five-minute drill, the child was told "Stay in your seat" and allowed to return to his original activity.

As revealed in Figures 1 and 2, both programs were extremely effective in reducing the maladaptive target responses. While the staff who applied the procedures noted that there was an obvious time and energy investment in setting up and carrying out the program, it was felt that the results justified the expenditure.

Case Study 2

The subject of this intervention program was a 16-year-old Caucasian male who had previously been diagnosed as severely retarded, autistic, schizophrenic, psychotic and brain damaged. Prior to being placed in a public school demonstration program for autistic and autistic-like youth he had been awaiting assignment to a state institution. While this youth had been in a variety of public school special education programs since the age of six, he had recently been excluded from attending any sessions by district personnel because of "violent and erratic behavior."

While compliant and generally socially appropriate during the initial phase of his placement, this adolescent began to manifest a variety of behavioral excesses several months after his initial assignment. In addition to manifesting several self-stimulatory responses he would frequently aggress against his teacher and class aide by blowing, spitting and burping in their faces. Needless to say, the program staff found these aggressive responses to be extremely offensive, both from a personal standpoint and as socialization issues, and thus were quite motivated to develop an intervention program. This motivation was closely correlated with the extremely high incidence of the target behavior, as revealed in Figure 3.

Since the subject appeared to be engaging in these behaviors for the purpose of attracting attention, a time-out procedure was selected for application. The adolescent was notified that blowing, spitting and burping would no longer be tolerated in the classroom and that instances of this behavior would result in his being placed in a time-out room (a 6' x 10' carpeted and lighted area of the classroom) for five minutes of quiet. During the period that he was in the time-out area he was not allowed to engage in school work or receive reinforcement or attention. Further, it was explained to the youth that the five minutes away from the classroom would be extended until he had been quiet for the duration of the penalty period and that if he resisted going to the time-out area that the amount of time he took to go to the area would be added to the five-minute period. While the subject had to be physically assisted in going to the time-out area the first few times the procedure was implemented, he quickly became more willing to remove himself to the restriction area with little or no resistance.

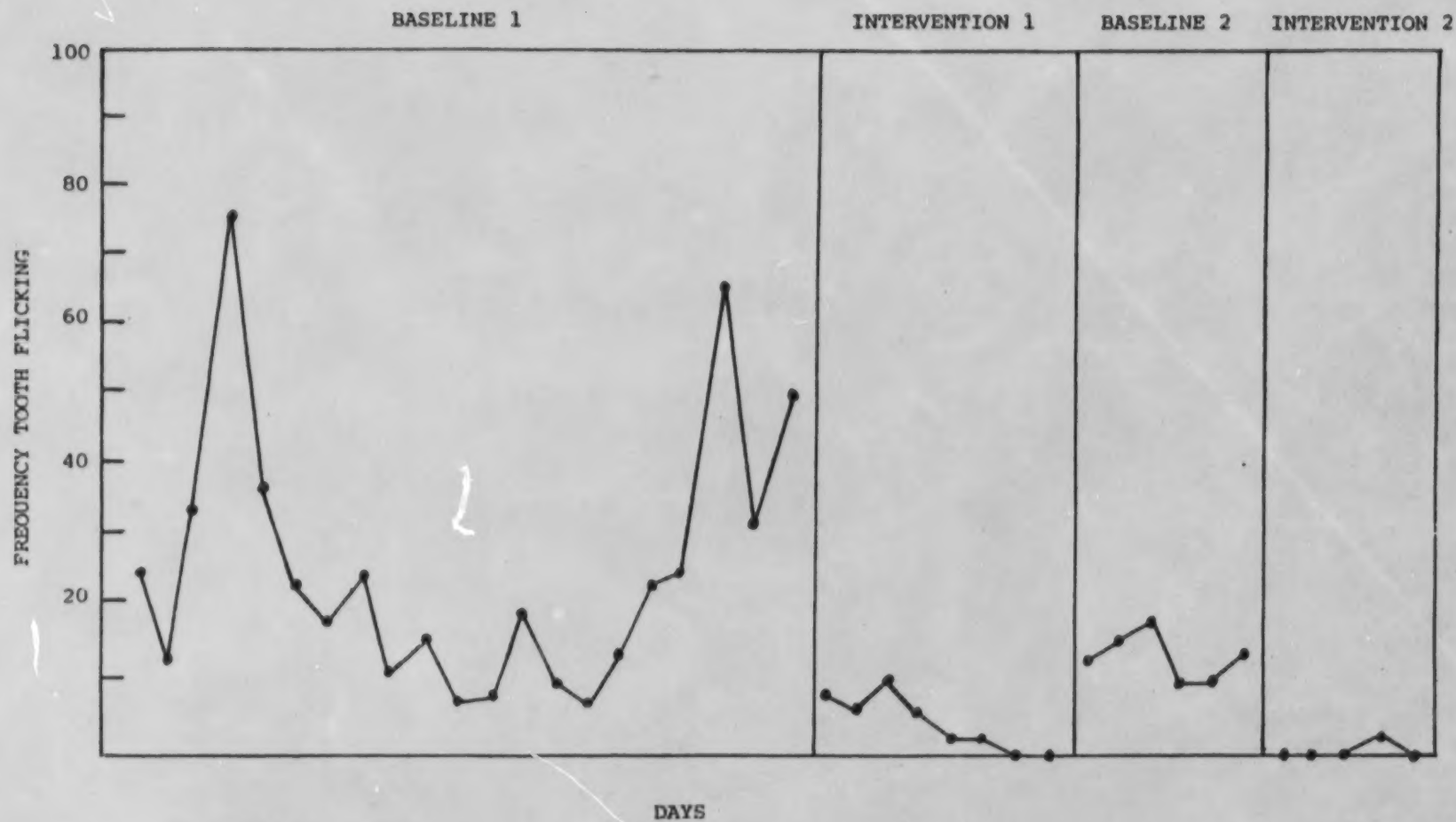


Figure 1. The effect of an overcorrection procedure on tooth flicking behavior.

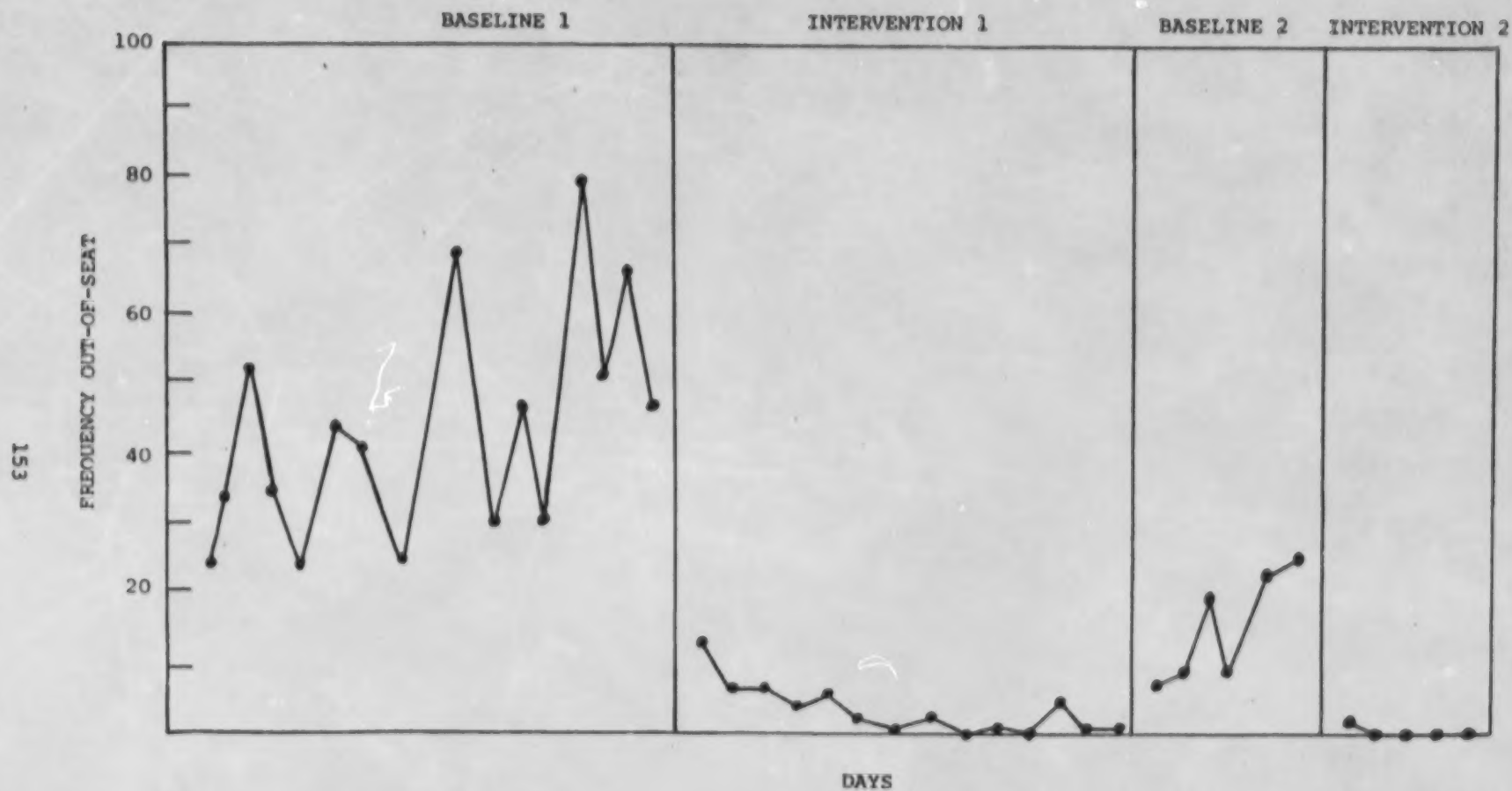


Figure 2. The effect of an overcorrection procedure on out-of-seat behavior.

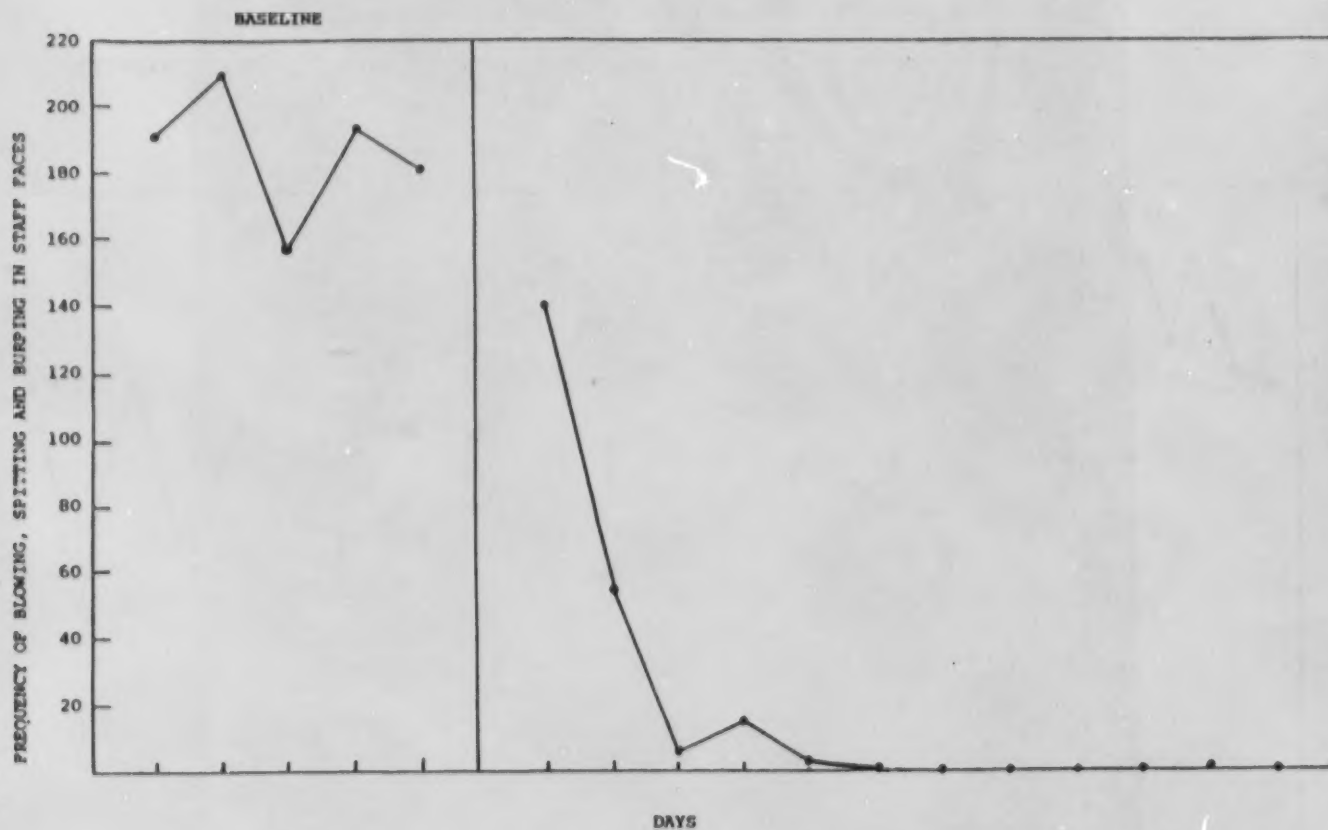


Figure 3. The effect of time-out on the social inappropriate responses of an autistic-like youth.

As graphically shown in Figure 3 the procedure was extremely effective in eliminating this subject's abhorrent social behavior. Even though time-out cannot be deemed universally appropriate with autistic and autistic-like children and youth neither can it be categorized as invariably unsuitable.

Case Study 3

The subject of Case Study 3 was a 17-year-old autistic adolescent male. Diagnosed as autistic at the age of four, this youth had been in day school and public school programs for autistic and autistic-like pupils since he was seven. The educational and treatment procedures applied in these programs had resulted in excellent progress, including near age-appropriate receptive and expressive language, and sixth grade level reading recognition ability. In addition, this adolescent was quite socially adept and typically under good stimulus control. Nonetheless, on occasion he would become belligerent, quarrelsome and resistant to following the structure imposed by his teacher. Because of the youth's age and because post-public-school disposition was being discussed, it was decided by his teacher that efforts to decrease these maladaptive patterns would be in his best interest.

Based on the youth's relatively high functioning and supportive home environment, a parent-teacher communication program was selected as the most suitable intervention strategy. This program involved the teacher rating the subject daily on four dimensions of behavior: academic productivity; social interaction; compliance; and self-control. Each factor was independently evaluated using a five-point scale. The youth was required to take his rating sheet home daily where his parents provided privileges proportionate to the number of points he had earned at school. Television watching, dessert, "treats," and snacks were among the consequences used. In addition, if the youth accumulated 90 percent of the maximum number of points throughout the week then a special reinforcer, such as a family outing, was granted.

The program was deemed highly successful by the adolescent's classroom teacher and parents. Figure 4 provides one measure representative of this success. As shown, the youth's threatening remarks, one component of the "self-control" factor, were significantly reduced by this intervention program.

Case Study 4*

The focus of this program was a seven-year-old autistic-like female. This child, in her first year of public school placement, had a history of self-abusive and aggressive behaviors which had been consistently displayed both at home and the preschool she attended and which were continued in public school. She also displayed self-stimulatory behaviors and delayed language development.

*This program was designed and implemented by Diana Shelly, Kansas Public Schools, Kansas City.

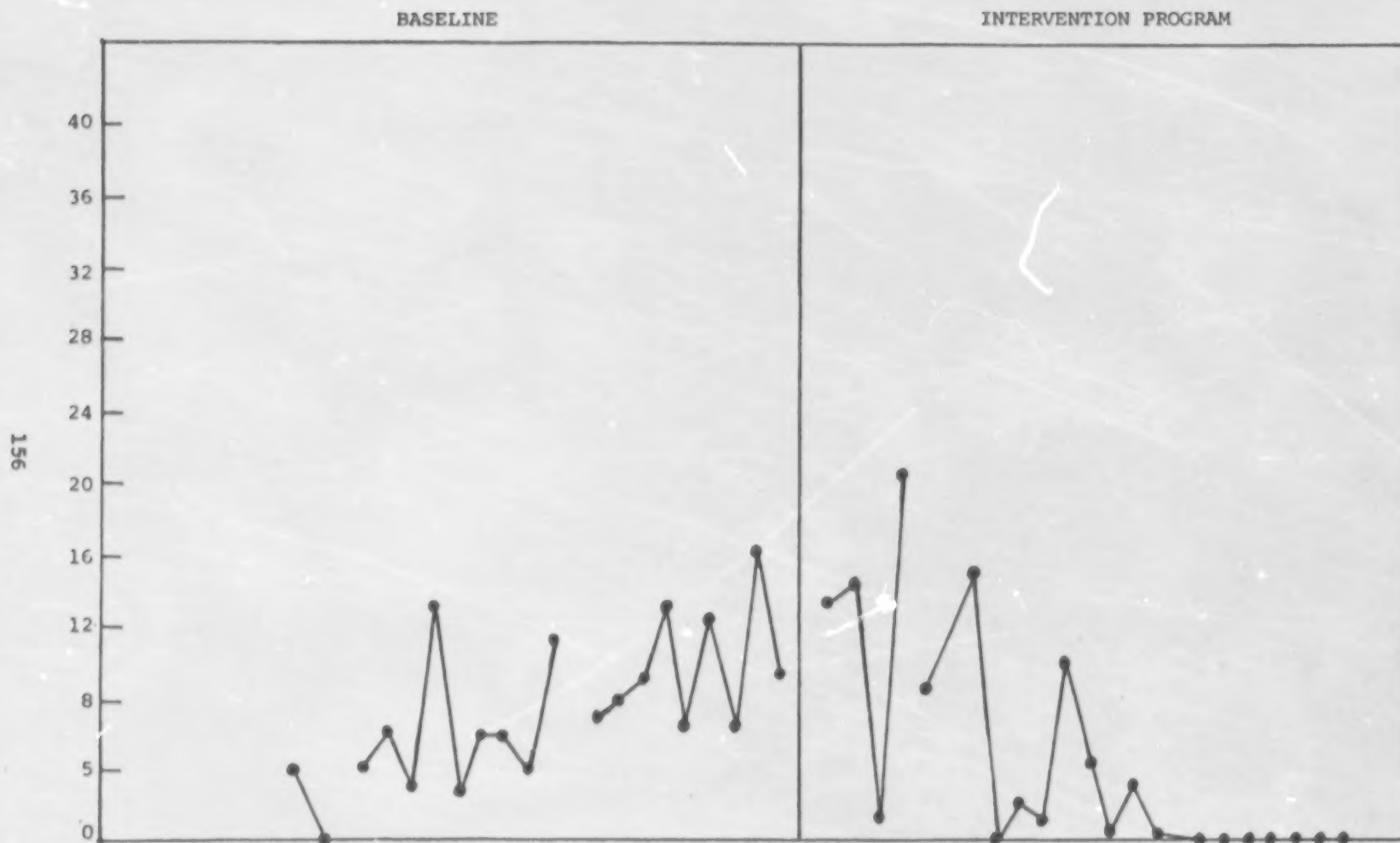


Figure 4. The effect of a parent-teacher positive reinforcement program on the threatening postures and remarks of an autistic adolescent.

Behaviors of particular concern to her classroom teacher were self-biting, self-hitting and aggressiveness. These behaviors were respectively defined as follows: Self-biting--instances of the child putting her teeth to her skin with sufficient pressure to make an impression on the skin; self-hitting--instances of the child bringing her hand(s) to her head or stomach with sufficient force to produce an audible sound and/or leave a mark; and aggressiveness--instances of scratching (defined as the fingertips or fingernails being used to produce an indentation or mark on a teacher or aide) or biting (defined as occasions when the subject's teeth made an impression on the teacher or aide). The frequency of the above-identified responses were observed consecutively for 4.5 hours daily.

Following an analysis of baseline data and the response pattern it was hypothesized that the aberrant behaviors were a direct attempt by the child to manipulate her classroom teacher. That is, it appeared that the subject resorted to self-abuse and aggressiveness as a means of temporarily halting an activity or in securing non-academically related teacher attention. Accordingly, the intervention program involved the withdrawal of adult attention contingent upon the display of the target behaviors. Specifically, when the child engaged in self-abusive or aggressive behavior no attempts were made to stop her. Further, the child received no adult eye contact, verbal directions or response. While the teacher and her aide experienced some pain and anguish in applying this program, it was highly successful, as revealed in Figures 5, 6 and 7. As with many programs of this nature the deceleration of the response patterns were not dramatic. However, because of the consistency with which the program was applied, it was effective.

SUMMARY

Without argument, behavior modification procedures can be used to effect planned behavioral changes with autistic and autistic-like children and youth. As suggested however, educators must recognize that the success of such intervention approaches is dependent on attentiveness to the various elements of the behavioral program selected for use, as well as the adroit translation of model principles into functional procedures. Further, it should also be recognized that interpersonal relationships have a significant bearing on the outcome of any intervention program. However coordinated and well planned, the principles used will only be effective if there is a good working relationship between the implementer and the subject under treatment.

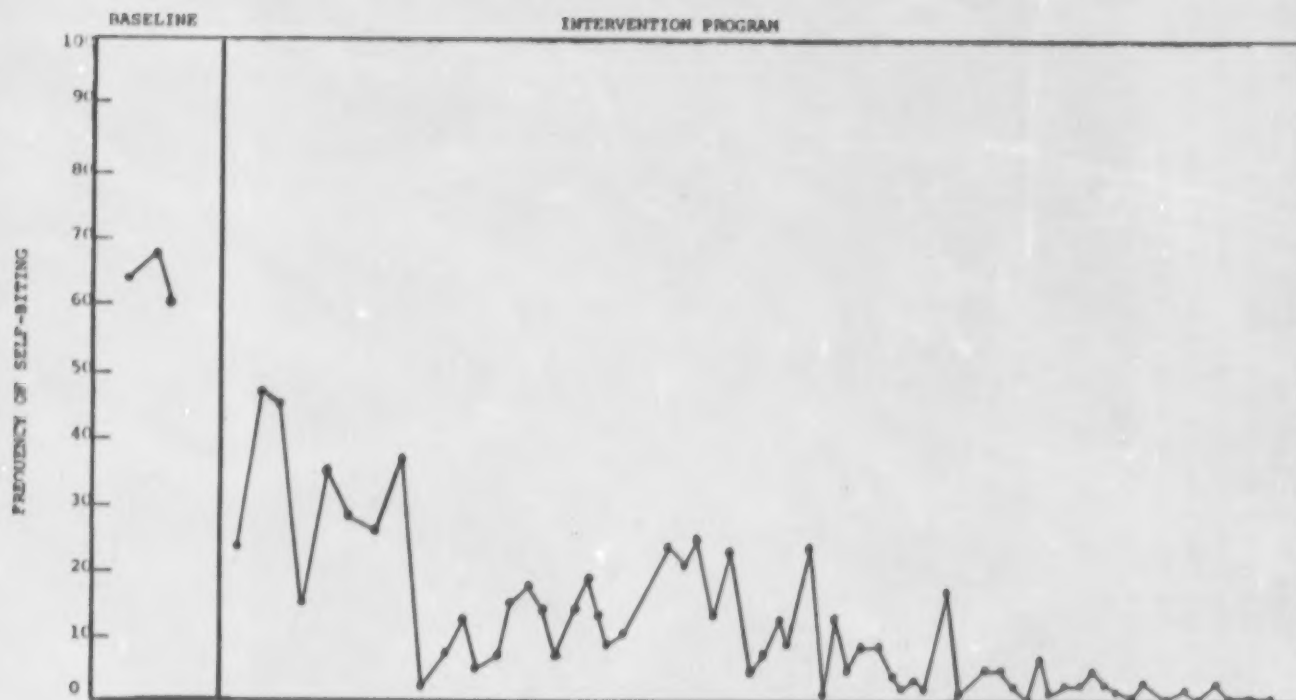


Figure 5. The effects of an extinction program on the frequency of self-biting of an autistic-like child.

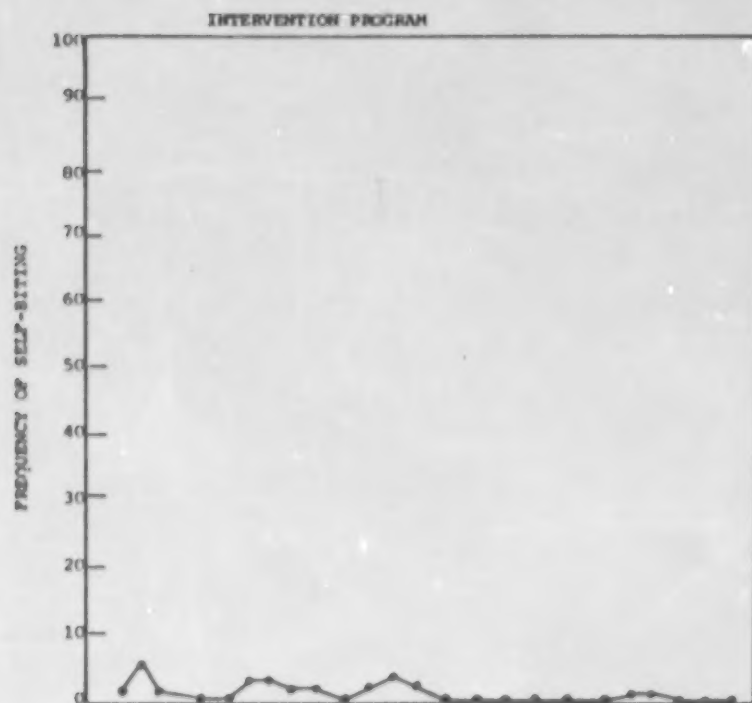


Figure 5 (continued)



Figure 6 (continued)



Figure 7 (continued)

REFERENCES

- Almond, P., Rodgers, S., & Krug, D. Mainstreaming: A model for including elementary students in the severely handicapped classroom. Teaching Exceptional Children, 1979, 11(4), 135-139.
- Ando, H. Training autistic children to urinate in the toilet through operant conditioning techniques. Journal of Autism and Childhood Schizophrenia, 1977, 7(2), 151-163.
- Ayllon, T. Intensive treatment of psychotic behavior by stimulus satiation and food reinforcement. Behavior Research and Therapy, 1963, 1, 53-61.
- Ayllon, T., & Michael, J. The psychiatric nurse as a behavioral engineer. Journal of the Experimental Analysis of Behavior, 1959, 2, 323-334.
- Bandura, A. Principles of behavior modification. New York: Holt, Rinehart, & Winston, 1969.
- Barry, R. J., & James, A. L. Handedness in autistics, retardates, and normals of a wide age range. Journal of Autism and Childhood Schizophrenia, 1978, 8(3), 315-323.
- Bartak, L., Rutter, M., & Cox, A. A comparative study of infantile autism and specific developmental receptive language disorders. Journal of Autism and Childhood Schizophrenia, 1977, 7(4), 383-396.
- Bersoff, D., & Grieger, R. An interview model for the psycho-situational assessment of children's behavior. American Journal of Orthopsychiatry, 1971, 41(3), 483-493.
- Birnbrauer, J. S. Generalization of punishment effects--A case study. Journal of Applied Behavior Analysis, 1968, 1, 201-211.
- Bonvillian, J. D., & Nelson, K. E. Sign language acquisition in a mute autistic boy. Journal of Speech and Learning Disorders, 1976, 41(3), 339-347.
- Brown, R. A., Pace, L. S., & Becker, W. C. Out of the classroom: Treatment of extreme negativism and autistic behavior in a six-year-old boy. Exceptional Children, 1969, 36(2), 115-122.
- Campbell, M., & Cohen, I. L. Treatment of infantile autism. Comprehensive Therapy, 1978, 4(5), 33-37.
- Campbell, M., Hardesty, A. S., & Burdock, E. I. Demographic and perinatal profile of 105 autistic children: A preliminary report. Psychopharmacology Bulletin, 1978, 14(2), 36-39.
- Cantwell, D. P., & Baker, L. The language environment of autistic and dysphasic children. The Journal of the American Academy of Child Psychiatry, 1978, 17(4), 604-613.

- Clements, J. E., & Tracy, D. B. Effects of touch and verbal reinforcement on the classroom behavior of emotionally disturbed children. In J. Logan (Ed.), Readings in behavior modification. Guilford, CT: Special Learning Corporation, 1978.
- Deutsch, M., & Parks, A. L. The use of contingent music to increase appropriate conversational speech. Mental Retardation, 1978, 16(1), 33-36.
- Folstein, S., & Rutter, M. Infantile autism: A genetic study of twenty-one twin pairs. Journal of Child Psychology and Psychiatry, 1977 18(4), 297-321.
- Foxx, R. M. Attention training: The use of overcorrection avoidance to increase the eye-contact of autistic and retarded children. Journal of Applied Behavior Analysis, 1977, 10(3), 489-499.
- Foxx, R. M. The use of overcorrection to eliminate the public disrobing (stripping) of retarded women. Behavior Research and Therapy, 1976, 14, 53-61.
- Foxx, R. M. The use of overcorrection procedure in eliminating self-stimulatory behavior in a classroom for retarded children. Unpublished doctoral dissertation, Southern Illinois University, 1971.
- Foxx, R. M., & Azrin, N. H. The elimination of outside self-stimulatory behavior of overcorrection. Journal of Applied Behavior Analysis, 1973, 6, 1-12.
- Hall, R. V. Behavior modification: The measurement of behavior. Merriam, KS: H & H Enterprises, 1970.
- Hall, R. V., Hawkins, R. P., & Axelrod, S. Measuring and recording student behavior: A behavior analysis approach. In R. A. Weinberg and F. H. Wood (Eds.), Observation of pupils and teachers in mainstream and special education: Alternative strategies. Minneapolis, MN: Leadership Training Institute, 1975.
- Kovvitt, F. M. Teaching speech to an autistic child through operant conditioning. Journal of Orthopsychiatry, 1965, 35, 927-936.
- Hung, D. W. Using self-stimulation as reinforcement for autistic children. Journal of Autism and Childhood Schizophrenia, 1978, 8(3), 355-365.
- Hung, D. W., & Thelander, M. J. Summer camp treatment program for autistic children. Exceptional Children, 1978, 44(7), 534-536.
- Iwata, B., & Bailey, J. Reward versus cost token systems: An analysis of the effects on students and teacher. Journal of Applied Behavior Analysis, 1974, 7, 567-576.
- Kanner, L. Autistic disturbances of affective contact. Nervous Child, 1943, 2, 217-250.

- Kauffman, K. E., & O'Leary, K. D. Reward, cost and self-evaluation procedures for disruptive adolescents in a psychiatric hospital school. Journal of Applied Behavior Analysis, 1972, 5, 293-316.
- Kazdin, A. Response cost: The removal of conditioned reinforcers for therapeutic change. Behavior Therapy, 1972, 3, 533-546.
- Kerr, N., Meyerson, L., & Michael, J. A procedure for shaping verbalizations in a mute child. In L. P. Ullman and L. Krasner (Eds.), Case studies in behavior modification. New York: Holt, Rinehart and Winston, 1965.
- Koegel, R. L., Firestone, P. B., Kramme, K. W., & Dunlap, G. Increasing spontaneous play by suppressing self-stimulation in autistic children. Journal of Applied Behavior Analysis, 1972, 7(4), 521-528.
- Koegel, R. L., Glahn, T. J., & Nieminen, G. S. Generalization of parent-training results. Journal of Applied Behavior Analysis, 1978, 11(1), 95-109.
- Koegel, R. L., & Rincover, A. Treatment of psychotic children in a classroom environment: Learning in a large group. Journal of Applied Behavior Analysis, 1974, 45-49.
- Liberman, R. P., Tiegen, J., Patterson, R., & Baker, V. Reducing delusional speech in chronic, paranoid schizophrenics. Journal of Applied Behavior Analysis, 1973, 6, 57-64.
- Lovaas, O. I., Freitag, G., Gold, V. J., & Kassorla, I. C. Recording apparatus and procedure for observation of behaviors of children in free play settings. Journal of Exceptional Child Psychology, 1965, 2, 108-120.
- Lovaas, O. I., Freitas, L., Nelson, K., & Whalen, C. The establishment of imitation and its use for the development of complex behavior in schizophrenic children. Behavior Research and Therapy, 1967, 5, 171-181.
- Lovaas, O. I., & Simmons, J. O. Manipulation of self-destruction in three retarded children. Journal of Applied Behavior Analysis, 1969, 2, 143-157.
- Margolies, P. M. Behavioral approaches to the treatment of early infantile autism: A review. Psychological Bulletin, 1977, 8(2), 249-264.
- Mathis, B. C., Cotton, J. W., & Sechrest, L. Psychological foundations of education. New York: Academic Press, 1970.
- Mitchell, W. S., & Stoffelmoor, B. E. Application of the Premack principle to the behavioral control of extremely inactive schizophrenics. Journal of Applied Behavior Analysis, 1973, 6, 419-423.
- Mowrer, O. H. Learning theory and behavior. New York: Wiley, 1960.

- Mulhern, T., & Baumeister, A. A. An experimental attempt to reduce stereotype by reinforcement procedures. American Journal of Mental Deficiency, 1969, 74, 69-74.
- Neel, R. S. Autism: Symptoms in search of a syndrome. In F. H. Wood and K. C. Lakin (Eds.), Disturbing, disordered or disturbed? Minneapolis: MN: University of Minnesota, 1979.
- Newman, R., Whorton, D., & Simpson, R. The modification of self-stimulatory verbalizations in an autistic child through the use of an overcorrection procedure. AAESPH Review, 1977, 2(3), 157-163.
- Noll, M. B., & Simpson, R. L. The effects of physical time-out on the aggressive behaviors of a severely emotionally disturbed child in a public school setting. AAESPH Review, 1979, 4(4), 399-406.
- O'Connor, R. D. Modification of social withdrawal through symbolic modeling. Journal of Applied Behavior Analysis, 1969, 2, 15-22.
- O'Leary, K. D., & Drabman, R. Token reinforcement programs in the classroom: A review. Psychological Bulletin, 1971, 75, 379-398.
- Parks, A. L. Behavior disorders: Helping children with behavioral problems. Austin, TX: Learning Concepts, 1976.
- Patterson, G. R. A basis for identifying stimuli which control behaviors in natural settings. Child Development, 1974, 45, 900-911.
- Plummer, S., Baer, D., & LeBlanc, J. Functional considerations in the use of procedural time-out and an effective alternative. Journal of Applied Behavior Analysis, 1977, 10, 689-705.
- Rendle-Short, J. Infantile autism diagnosis. Austin, TX: National Society for Autistic Children, 1978.
- Repp, A. C., & Deitz, S. M. Reducing aggressive and self-injurious behavior of institutionalized retarded children through reinforcement of other behaviors. Journal of Applied Behavior Analysis, 1974, 7, 313-326.
- Rimland, B. The differentiation of childhood psychoses: An analysis of checklists for 2,218 psychotic children. Journal of Autism and Childhood Schizophrenia, 1971, 1, 161-174.
- Rincover, A. Variables affecting stimulus fading and discriminative responding in psychotic children. Journal of Abnormal Psychology, 1978, 87(5), 541-553.
- Risley, T. R. The effects and side-effects of punishing the autistic behaviors of a deviant child. Journal of Applied Behavior Analysis, 1968, 1, 21-34.
- Risley, T., & Wolf, M. Establishing functional speech in echolalic children. Behavioral Research and Therapy, 1967, 5, 73-88.

- Ritvo, E. R., & Freeman, B. J. National society for autistic children: Definition of the syndrome of autism. Journal of Autism and Childhood Schizophrenia, 1978, 8, 162-169.
- Rutter, M. Diagnosis and definition. In M. Rutter and E. Schopler (Eds.), Autism: A reappraisal of concepts and treatment. New York: Plenum, 1978.
- Sasso, G. The use of overcorrection procedures in a public school setting for the modification of self-stimulatory and disruptive behaviors in a severely emotionally disturbed child. Unpublished master's thesis, University of Kansas, 1977.
- Shoben, E. J. A learning theory interpretation of psychotherapy. Harvard Educational Review, 1948, 18, 129-145.
- Simpson, R. L., & Sasso, G. M. The modification of rumination in a severely emotionally disturbed child through an overcorrection procedure. AAESPH Review, 1978, 3, 145-150.
- Skinner, B. F. Science and human behavior. New York: MacMillan, 1953.
- Strain, P. S., Kerr, M. M., & Ragland, E. U. Effects of peer-mediated social initiations and prompting/reinforcement procedures on the social behavior of autistic children. Journal of Autism and Developmental Disorders, 1979, 9(1), 41-53.
- Tanner, B. A., & Zeiler, M. Punishment of self-injurious behavior using aromatic ammonia as the aversive stimulus. Journal of Applied Behavior Analysis, 1975, 8, 53-58.
- Tate, B. G., & Baroff, G. S. Aversive control of self-injurious behavior in a psychotic boy. Behavior Research and Therapy, 1966, 4(4), 281-287.
- Torisky, C. V. The hostage parent: A lifestyle or a challenge? Journal of Autism and Childhood Schizophrenia, 1978, 8(2), 234-240.
- Twardosz, S., & Sajwaj, T. Multiple effects of a procedure to increase sitting in a hyperactive retarded boy. Journal of Applied Behavior Analysis, 1972, 5, 73-78.
- Wheeler, A. J., & Sulzer, B. Operant training and generalization of a verbal response form in a speech-deficient child. Journal of Applied Behavior Analysis, 1970, 3, 139-147.
- Williams, C. D. The elimination of tantrum behavior by extinction procedures. Journal of Abnormal and Social Psychology, 1959, 59, 269.
- Wing, L. Social, behavioral, and cognitive characteristics: An epidemiological approach. In M. Rutter and E. Schopler (Eds.), Autism: A reappraisal of concepts and treatment. New York: Plenum, 1978.

- Wolf, M., Risley, T., & Mees, H. Application of operant conditioning procedures to the behavior problems of an autistic child. Behavior Research and Therapy, 1964, 1, 305-312.
- Wolf, M., & Risley, T. Application of operant conditioning procedures to the behavior problems of an autistic child: A follow up and extension. Behavior Research and Therapy, 1967, 5, 103-111.
- Wood, F. H., & Lakin, K. C. Punishment and aversive stimulation in special education: Legal, theoretical and practical issues and their use with emotionally disturbed children and youth. Minneapolis: MN: University of Minnesota Advanced Training Institute, 1978.
- Zabel, R. H. Behavioral approaches to behavior management. In G. Brown, R. L. McDowell, and J. Smith (Eds.), Educating adolescents with behavior disorders. Columbus, OH: Charles C. Merrill, 1981.
- Zimmerman, E. H., & Zimmerman, J. The alteration of behavior in a special classroom situation. Journal of the Experimental Analysis of Behavior, 1962, 5, 59-60.

An Individualized Curricula for Children and Youth with Autism

Ellen McGinnis

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AN INDIVIDUALIZED CURRICULA FOR
CHILDREN AND YOUTH WITH AUTISM

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The aims of education for any handicapped child are: to help overcome or compensate for the primary disabilities; to reduce or remove the secondary behavior problems; to improve the level of self-care; to teach practical, academic and occupational skills; to help the handicapped person to derive as much satisfaction and enjoyment from life as possible. (Wing, 1976)

Autism is viewed as a life-long disability which can be lessened only through appropriate education. These children and youth, as a group, present a set of common characteristics; among these are communication disorders, uneven patterns of skill development, maladaptive behaviors, and lack of appropriate social interactions. The specific cluster of characteristics suggests that these individuals be considered autistic and implies that special interventions happen within their educational programs. Yet, even though such general similarities exist, this population does not comprise a homogeneous group. Therefore, no one curricular sequence will meet their individual needs, and one approach, yielding significant gains for one child, may be inappropriate or unproductive when applied for another.

How do children and youth with autism differ from one another in ways which influence curriculum choices? It is estimated that 60 percent of autistic individuals are moderately to severely retarded, with another 20 percent falling within the moderate to mild intellectual range (Ritvo & Freeman, 1978). The chronological age of the student is an additional priority consideration in determining what is most important for the individual to learn. Consequently, the choice of curricular content and strategies employed are largely influenced by the severity of mental retardation, as well as by the student's chronological age.

Communication disorders, a salient characteristic of autistic persons, vary greatly in type and severity (Rutter, 1978c). Such disabilities range from very few communication skills (non-verbal, impaired use and understanding of gestures for communication) to highly verbal, but unusual, expressive language. Receptive, written, symbolic and social language deficits also occur in various complexities (Ricks & Wing, 1976).

Socialization skills also vary for individuals with autism (Rutter, 1978a) and intervention plans must be designed to consider these differences. Wing and Gould (1979) delineate these skill deficits as: (1) social aloofness (most of the time, the child is non-responsive to social cues and overtures); (2) passive interaction (lack of spontaneous social interaction by the child, but non-resistive when contact is initiated by another); and

(3) active, but odd interaction (approaches are initiated, but the actual behavior or the manner in which the interaction is carried out is not appropriate).

Skill development is not only varied among these children, but uneven ability and skill patterns are also present within each child (Schopler, Reichler & Lansing, 1980). An autistic individual may have good skills in a specific area such as long-term memory or fine motor skills which are not in accordance with his/her general intellectual functioning. Utilization of these strengths, as well as programming for particular deficits, are valuable inclusions in curricular areas.

Due to the wide range of abilities present within the autistic population, an individualized curricula should be developed for each child. The purpose of this chapter, therefore, is not to present a singular content for students with autism, but rather to offer a base for instructional areas and strategies guided by what we know about autism.

DESIGN OF AN INDIVIDUALIZED CURRICULA

Planning an individualized curricula for the autistic child begins with comprehensive assessment strategies such as those described by Dorsey (1982). Instruction in communication and behavior skills are not presented as isolated domains, but rather should be integrated into all aspects of the child's educational program. (Refer to the chapters by McLean and Snyder-McLean and Simpson.) Furthermore, these skills, including academic instruction, should occur in relation to the environments in which the student is presently functioning (e.g., school, home, community) and the future settings in which he/she will likely participate (e.g., vocational, independent living/group home).

To facilitate the continued use of learned skills and to insure the transfer of competencies from the teaching setting to natural settings, systematic and direct intervention is required. Therefore, generalization and maintenance strategies, along with individual progress recording, are included in the student's curricula.

An appropriate curricula should also include strategies for teaching to the content goals in ways which consider the characteristics of autism and the manner in which the child learns most effectively. An individualized transition plan (Brown, Pumpian, Baumgart, Vandeventer, Ford, Nisbet, Schroeder & Gruenewald, 1981) which prepares the autistic student for adjustment in subsequent environments, and parental involvement and/or home instruction programs additionally should be designed and implemented for each student. Direct planning is also required to provide for integration into public school settings and/or community work environments and for productive interactions with the nonhandicapped. A comprehensive curricula for an autistic youngster, therefore, should include the following components:

- 1) Assessment
- 2) Skills (Communication/Behavioral/Social/Self-help/Academic)

- 3) Environmental Domains (e.g., Domestic, Play/Recreation, Community, School and/or Vocational)
- 4) Teaching Strategies, Methods and Materials
- 5) Maintenance and Generalization Strategies
- 6) Progress Documentation
- 7) Interactions with Nonhandicapped/Reintegration Strategies
- 8) Parent/Home Involvement
- 9) Transition Plan

SELECTION OF SKILLS AND DOMAINS

The "criterion of ultimate functioning" (Brown, Nietupski & Hamre-Nietupski, 1976) assumes that the handicapped person is instructed in the skills which will allow him/her to operate independently and productively in the least restrictive environment. This concept implies that educational content and techniques must be carefully considered and planned, and their importance to the long-range functioning of each individual be justified. These authors advocate that the following questions be asked prior to planning an individualized program:

- 1) Why should we engage in this activity?
- 2) Is this activity necessary to prepare students to ultimately function in complex heterogeneous community settings?
- 3) Could students function as adults if they did not acquire the skill?
- 4) Is there a different activity that will allow students to approximate realization of the criterion of ultimate functioning more quickly and more effectively?
- 5) Will this activity impede, restrict, or reduce the probability that students will ultimately function in community settings?
- 6) Are the skills, materials, tasks and criteria of concern similar to those encountered in adult life? (Brown et al., 1976, p. 6)

The above questions are intended to be asked in directing programs and curriculum for severely handicapped adolescents; nevertheless, it is relevant to ask similar questions for the less severely handicapped and younger autistic person.

Consider, for example, the case of seven-year-old Andrea. Possessing a near-normal nonverbal intellectual score, Andrea can read some vocabulary words, but shows virtually no comprehension of what she has read. While the other first graders are playing, Andrea seems content to sit by herself

and watch a record as it turns on the player, or to wind a toy clock, listen to the tick until it stops, then rewind the clock again and again. Andrea is unable to dress herself independently and, although she is quite verbal, there is little actual communication in these verbalizations. Should the majority of instructional time emphasize increasing word recognition skills or to teach meaningful communication? Is it more important for Andrea to learn the skills to play with other children and the behavior to participate in family activities, or to learn the sounds of the letters of the alphabet? In developing a program for Andrea, then, we still must ask such questions as:

- 1) What skills are relevant to enable this child to function most productively in the environments of home, school (or work for the older autistic individual) and community?
- 2) How, or what methods and strategies, will facilitate the actual use of these skills in these environments?

In answering such questions it is useful to separate autistic students into two groups: (1) those individuals falling within the moderate to severely retarded range of tested cognitive ability; and (2) students with mild retardation to near-normal assessed non-verbal intelligence (Prior, 1979).

The Mildly Handicapped

The mildly handicapped group comprises a minority of individuals with autism. Although they are referred to as mildly handicapped, they present severe problems in the areas of communication and social skills. Many may exhibit particular talents in the areas of music, mathematics, or science, but remain isolated from their peers due to odd, inappropriate mannerisms and an inability to understand the subtleties of language and social conventions. Unlike the severely handicapped child who may not choose to interact with others, the mildly handicapped child may desire social interaction, but lacks the social skills to do so satisfactorily.

To call these young people "near normal" or "mildly handicapped" is misleading, although most of them are functioning or attempting to function normally in the everyday world. They are only mildly handicapped if compared with the severely handicapped. If compared instead with their normal peers, one is instantly aware of how different they are and the enormous effort they have to make to live in a world where no concessions are made and where they are expected to conform. (Everard, 1976)

Bartak and Rutter (1976) studied elementary age autistic students of both low and average assessed cognitive ability. Although academic achievement was greater for those assessed as average intellectually, all students studied demonstrated impaired language development, socially unacceptable behavior patterns, and showed an inability to form adequate social relationships.

A follow-up study of autistic young adults with normal ability on non-verbal intelligence tests found that most made good academic progress and notable gains in their use of verbal language; however, only approximately one-half of this group were successfully employed in the community (Bartak & Rutter, 1976). These individuals have also been found to display impaired social relationships as adults (Brown, 1978) and, in general, the outcome with respect to employment and social progress remains poor for the majority of near-normal autistic individuals (Lotter, 1978). In addition, many mildly handicapped autistic adolescents are aware of and concerned with their inability to develop adequate social relationships (Rutter, 1978b) which may lead to increased anxiety and unhappiness.

The plight of the higher functioning autistic adolescent, comprising about 15 to 20 percent of the entire autistic population, is poignant. Some get very near to normality, and yet to themselves and to their parents they remain painfully different, outside the social and employment mainstream. (DeMyer, 1979, p. 222)

From such follow-up studies, we can conclude that the opportunities for continued, productive employment and satisfaction gained from social relationships are poor for the autistic adult. Therefore the educational program for the mildly handicapped individual must reflect the need for learning social, vocational, and communication skills in the environments of home, school, and the community.

Moderate to Severely Handicapped

For the moderate and severely handicapped individual, emphasis should be placed on teaching functional skills. The functional orientation involves the direct teaching of sets of skills needed to perform independently in the least restrictive current (school) and future environments (work, home, and community) (Brown, Branston, Hamre-Nietupski, Pumpian, Certo & Gruenewald, 1979). This approach includes instruction in academic and communication skills and behavior management as support for curricular domains. Functionality is further determined by the frequency these skills will be needed as an adult.

Donnellan (1980) suggests that functionality be determined by asking the following question: "If this child does not learn to perform this skill, will someone have to do it for him?" (p. 71). For instance, if the student does not learn to zip his/her jacket or cut up food, these activities must be done by someone else; on the other hand, the sorting of blocks will not.

As the severely handicapped individual approaches adulthood, choices between important curricular areas must be made. The concept of functionality suggests that these be made on the basis of what is most important for the individual to learn which will enable functioning in the least restrictive environment.

Education at the secondary level must abandon the general education approach that assumes that, if the student has more skills, s/he will automatically have more opportunities

and independence; instead, it must focus on the development of practical skills that will insure participation in important adult activities. (Bellamy & Wilcox, 1980, p. 244)

A curricula for a moderate to severely handicapped individual additionally utilizes objectives, materials and activities which are appropriate to his/her chronological age (Brown et al., 1979a). For example, rather than teaching an autistic adolescent to sort blocks, the student would learn to sort items such as clothing and silverware. Following is a brief list of nonfunctional activities and functional activities which utilize age-appropriate materials for adolescents:

Non-functional Activities

1. Counting pegs and blocks
2. Raising arm in imitation
3. Pointing to hands
4. Using a zipper board
5. Walking on a balance beam
6. Cutting shapes
7. Sorting paper pieces; matching colored blocks
8. Stacking rings
9. Placing pegs in a pegboard
10. Categorizing pictures
11. Reading basal text
12. Math worksheets

Functional Activities

1. Counting silverware, money for a purchase
2. Raising arm to put on shirt or jacket
3. Shaking hands
4. Zipping own jacket, then going outside
5. Walking across bleachers at a sports event
6. Cutting food at mealtime
7. Matching and sorting silverware into drawer tray; sorting clothing or coins; sorting materials such as nuts and bolts (needed in sheltered workshop settings); matching a picture of a container of food with real food in a grocery store
8. Stacking dishes; grocery boxes
9. Placing coins in a vending machine; putting coins in the washing machine at a laundromat
10. Categorizing articles of clothing; stocking shelves with like grocery items
11. Reading bus schedules, menus, street signs, recipes, TV guides, etc.
12. Solving real problems (for example, there are three apples for five students...)

This curricular approach advocates for instruction in the natural environments where the skills will actually be needed and used. As the student becomes older, less instructional time should be spent in a school setting and more time should be spent in instruction in natural settings (Donnellan, Falvey, Pumpian, Baumgart, Schroeder & Brown, 1980).

Brown et al. (1976) provide the following reasons for the necessity of teaching in the natural environment: (1) artificial tasks, materials and environments, such as paper and pencil worksheets in the classroom, do not teach the student to solve real problems; (2) artificial tasks, which most often require a student to point to or touch a picture or an object, are not the actions needed in performing natural tasks (these actions are getting, picking up, assembling, etc.); and (3) the student ultimately will be interacting in the natural environments of home, community, and work rather than in a school setting. Bellamy and Wilcox (1980) also state this importance:

At issue is not what a student can do in response to instructional cues in the classroom, but rather what s/he does on a regular basis in domestic, leisure, and community settings. (Bellamy & Wilcox, 1980, p. 254)

However, simulating work and home environments in the school setting can initially be efficient and useful in teaching a variety of performance tasks required in natural environments as long as such activities do not substitute for performance in natural settings.

Five instructional domains for severely handicapped individuals are suggested by Brown, Falvey, Vincent, Kaye, Johnson, Ferrara-Parrish and Gruenewald (1980). These include: domestic, vocational, community participation, recreation/leisure, and interactions with nonhandicapped persons.

Community

It is estimated that 75 percent of autistic individuals will spend their adult lives in institutional environments, with the remaining 25 percent of this population requiring various degrees of supervision and support to adequately function in the general community (DeMyer, 1979). The student's educational program must therefore reflect the importance of manageable, and productive, community participation. Such concentration should increase the student's independence, skills for interacting with others, and assist in the normalization process (Wolfensburger, 1972). Community mobility, using public transportation, for instance, leads to less restrictive living and working environments. Examples of skills include: knowledge of money, recognition and comprehension of signs (danger, etc.), recognition of situations which may be hazardous, methods of requesting assistance, the use of home and pay telephones, shopping for groceries and clothing, and participating in community recreation facilities.

Domestic

It is necessary to provide instruction in a variety of domestic and self-help skills to insure that as a handicapped adult, the person with

autism will live in the least restrictive domestic setting. Examples of skills include meal preparation, grocery shopping, household chores, and self-help skills.

Sex education is a further area which requires direct instruction for the adolescent. Severely handicapped adolescents frequently exhibit inappropriate sexual behaviors (such as public masturbation), and they lack a vocabulary as a means to deal with their bodily changes and sex-related topics (Hamre-Nietupski, Ford, Williams & Gruenewald, 1978). "The natural timetable is upset in every way but in physical growth and sexual development when the teenager is autistic" (DeMyer, 1979, p. 219).

Vocational

Vocational training promotes independence, productivity, and normalization. As Simonson (1979) has stated, a special education program, involving both vocational and behavior management components is the only effective alternative to institutionalization for this population.

Determining the specific vocational environment considers the availability of employment, physical accessibility to the job site, and the specific interests and talents of the student (Falvey, Ferrara-Parrish, Johnson, Pumpian, Schroeder & Brown, 1979). Each individual must be evaluated in the tasks he/she is capable of performing and provided with the opportunities to practice these skills in natural work environments as well as in simulated situations. In addition to learning skills to complete a work task, job related skills (e.g., traveling to and from work) and general work skills (e.g., rate of performance, being on time) are included in the vocational domain (Falvey et al., 1979). An autistic individual's behavior, rather than their competencies in work performance itself, can be the primary difficulty in acquiring and maintaining employment (Rutter, 1978b).

Play/Recreation

Severely handicapped individuals with autism may demonstrate ritualistic or self-stimulatory behaviors which not only interfere with their learning, but also illicit fear to persons observing the behavior. Consequently, it is appropriate to teach when and where engaging in these behaviors are acceptable. In addition, some inappropriate activities (e.g., tearing pieces of paper) can be channeled into appropriate leisure activities (e.g., making colorful collages) (Dewey, 1973).

Recreational and leisure skills encourage constructive use of the severely handicapped individual's often "too much time to do nothing" and provide a way of teaching the social skills required for successful interpersonal interactions.

Appropriate play skills should be included in the curricula for the young autistic child. Behavior management strategies can assist in reducing the inappropriate use of toys, such as throwing or banging toy materials. Other problems which inhibit satisfying and acceptable play for the young autistic child include the refusal to initiate or engage in interaction with toys and peers, isolate play, and a limited play repertoire (Wehman, 1979). These skill deficits require direct and

deliberate teaching. Strain (1980) found that these children could be successfully instructed in play skills by presenting verbal instructions in what to do, then encouraging them to engage in play with verbal prompts and social praise. (Refer to the chapter by Chastain and Merzer.)

Dorsey (1981) provides a useful list of constructive play and recreational activities to guide curricular planning in this domain. (See Exhibit 1.)

A curricula for the autistic individual must be developed according to his/her skill competencies in relation to specific curricular domains. Exhibit 2 is a summary of the suggested curricular domains

Instruction in academic, behavior, social, communication, and self-help skills should be specified across domains. For example, social skills for the young severely handicapped child may include playing a game with a nonhandicapped peer (interactions with nonhandicapped domain), appropriate use of part playground equipment (community participation), appropriate ways to request help (pre-vocational), playing a game with a sibling (home), and appropriate play with toys (play). The following exhibits provide a way to structure the specific skills for instruction into the suggested goal areas.

Exhibit 1

A Brief Survey of Leisure Skills and Recreational Activities

Younger Children	Older Children and Adolescents
I. Individual Constructive Activities 1. Puzzles and manipulative toys. 2. Drawing or coloring, etc. 3. Looking at books, magazines. 4. Listening to radio, records or tapes and use of the equipment, including headphones. 5. Watching TV. 6. Swings, and other playground equipment. 7. Playing with age appropriate toys, i.e., blocks, trucks, doll. 8. Playing outside, i.e., digging in the sand. 9. Riding a trike or a bike. 10. Appropriate manipulation of toys and objects.	1. Models or age appropriate manipulative activities. 2. Art work or media exploration. 3. Looking at books and magazines. 4. Listening to radio, records, tapes and use of the equipment. 5. Watching TV. 6. Taking a walk. 7. Riding a bike. 8. Fixing things. 9. Using a camera. 10. Hobbies, i.e., plant care, animal care, scrap books, arts and crafts, playing an instrument, cooking. 11. Chores or responsibilities. 12. Solitaire or solo card games. 13. Shooting baskets, jogging, exercises, jump rope, etc.
II. Games <u>Ball Games</u> - roll, throw, catch and kick a ball, dodge ball, basketball, T-ball, tether-ball, balloon volleyball. <u>Gross Motor</u> - relay races, Red Rover, tug of war, Simon Says, Red Light/Green Light, jump rope, hopscotch, shuffleboard, bowling, hokey pokey, musical chairs, ring toss, children playing, sledding, tag. <u>Music</u> - rhythmic songs, finger plays, and instruments.	<u>Ball Games</u> - including baseball, softball, catch, volleyball. <u>Gross Motor</u> - tetherball, shuffleboard, bowling, darts, ring toss. <u>Music</u> - dancing, going to concerts, playing an instrument, singing.

Exhibit 1 (Continued)

Younger Children	Older Children and Adolescents
II. Games (continued) <u>Board & Table Games</u> - Bingo, checkers, Candyland, Mr. Mouth (other electronic games), two children sharing materials. <u>Card Games</u> - Old Maid, Concentration, Uno.	<u>Board & Table Games</u> - Bingo, checkers, electronic games, foosball, knock hockey, pinball. <u>Card Games</u> - Old Maid (variations), Uno, Concentration, War, Slap Jack.
III. Community Activities Roller skating, swimming, jogging, shopping, going out to eat, playing at a playground, pinball or electronic games. <u>Community Activities</u> - Cub Scouts, Brownies, 4-H Clubs, Special Olympics, Church groups, i.e., Sunday School.	Roller skating, ice skating, jogging, swimming, boating, bowling, shopping, going out to eat, exercise clubs, skiing, electronic games and pinball. <u>Community Activities</u> - Y, Boy Scouts, 4-H Clubs, Church groups, clubs and lessons.
IV. Social Skills Increasing peer interactions, increasing cooperative play with peers, increasing initiation of interactions with adults and peers.	Increasing age appropriate social skills, greetings, asking appropriate questions, standing at a distance that is appropriate; higher functioning adolescents need to learn when to apply rules, conversation topics that are appropriate, topics not to talk about, dealing with frustration, where to masturbate, etc.

Source: From presentation made by Beth Dorsey at Special Study Institute Programming for Autistic Children and Young Adults, Iowa Department of Public Instruction, 1981.

Exhibit 2

Summary of Curricular Domains

Elementary Mildly Handicapped:

Play/Social
Community Participation
Modifications in Pre-academic/Academic Program
Home
Integration into Regular Education Programs

Elementary Severely Handicapped:

Play/Social
Community Participation
Interactions with Nonhandicapped
Pre-vocational
Home

Secondary Mildly Handicapped:

Recreation/Leisure
Vocational/Work Experience and Transition
Community
Domestic
Integration/Interactions with Nonhandicapped

Secondary Moderate/Severely Handicapped:

Vocational and Transition
Domestic
Recreation/Leisure
Community
Interactions with Nonhandicapped

Exhibit 3

Development of Objectives: For Young Moderate/Severely Handicapped

DOMAINS:

SKILLS:	Interactions with Nonhandicapped	Community Participation	Pre-vocational	Home	Play
Social Skills					
Pre-academic Academic					
Communication					
Behavior					
Self-help					

Exhibit 4

Development of Objectives: For Young Mildly Handicapped

DOMAINS:

SKILLS:	Regular Class	Other Integration	Community Participation	Home	Play
Pre-academic Academic					
Communication					
Behavior					
Social Skills					
Self-help					

Exhibit 5

Development of Objectives: For Secondary Mildly Handicapped

SKILLS:	DOMAINS:				
	Regular/Special Class	Community Involvement	Vocational/ Work Experience	Recreation/Leisure	Domestic
Social					
Communication					
Academics/ Comprehension					
Behavior					

Exhibit 6

Development of Objectives: For Moderate/Severely Handicapped Adolescents

DOMAINS:

SKILLS:	Vocational	Domestic	Community	Recreation/Leisure	Interactions with Handicapped
Social					
Communication					
Self-help					
Academic					
Behavior					

INSTRUCTIONAL METHODS

Teaching autistic children requires attention to the characteristics of autism. These characteristics influence the manner in which teaching is carried out and suggest that particular methods and strategies are utilized. Following is a brief discussion of methods useful for teaching the autistic child.

Delivery of Instructions

Teaching should occur in both one-to-one settings and group formats. Although a one-to-one teaching arrangement may be necessary to provide initial instruction to meet a given objective, research suggests that autistic and severely handicapped children can learn via a group mode (Koegel & Rincover, 1974; Alberto, Jobes, Sizemore & Doran, 1980). Typically, there are more students than teachers in a classroom for autistic or mildly or severely handicapped students; thus group instruction is necessary from a practical viewpoint. Furthermore, such students will ultimately function more frequently in groups than in one-to-one settings in natural environments. Therefore, group instruction provides a way to teach the application of skills in the type of situation most frequently encountered.

Koegel and Rincover (1974) explained a procedure to facilitate group instruction. First, each child is instructed on a one-to-one basis and receives continual tangible reinforcement for correct responding. Next, the reinforcement schedule is thinned, and the student receives a reinforcer for each of two correct responses. Two children are then paired to work together, receiving reinforcement when correct responses are given. Gradual thinning of the reinforcement is carried out until both children consistently respond when reinforced for one of three correct responses. This process continues in the same manner as another student is added to the group.

Once a small group is established, the level of the specific task can be individualized for each student. For example, Peter may be asked to "pick up the book and give it to Leanna," while another child may be asked to follow only one direction. Additionally, the students in the group must be reinforced for watching, listening, and waiting for their turn.

Group instruction encourages learning adaptable interactions with others and generalizing these interactive skills in response to a variety of persons. Reliance on a one-to-one instructional approach can actually impede student progress, as it cannot be assumed that skills learned in such an arrangement will transfer to performance in a group setting (Koegel, Egel & Dunlap, 1980).

Each student must also learn to work in the absence of an adult. Once the student has learned a task in a one-to-one or group teaching setting, he/she should gradually complete more of the task independently. The student should be reinforced for this performance, gradually thinning the amount of reinforcement required and increasing the length of time the

student works independently (Donnellan-Walsh, Gossage, LaVigna, Schuler & Traphagen, 1976). Teaching a student to complete tasks without the direct involvement of the teacher furthers the likelihood that the skill will become a part of his/her skill repertoire.

Teaching Settings:

One-to-One
Small Group
Independent

Academic Instruction

Academic instruction must be made meaningful to the autistic child. Skills should not be instructed for the purpose of increasing the individual's academic skill level, but rather these skills should be directly related to the function of the skill. For instance, writing skills are not taught for the purpose of correctly forming the letters of the alphabet, but for the purpose of functional communication. Autistic children must learn that marks on paper communicate a meaning to the reader. We, as teachers, must insure that these children learn that meaning; if not, there is no value that they learn to write.

This approach advocates that skills be instructed in context. For example, focus is placed on teaching whole words or phrases in a meaningful context, in lieu of teaching a student to reproduce isolated phonetic sounds when shown a letter of the alphabet. The student's comprehension of the reading material must also be emphasized. This should be done not only in terms of factual recall, but also by relating this meaning to real objects, actions, feelings, and events. This also means, for instance, instead of teaching reading to a 13-year-old moderately handicapped youngster through the use of a basal reading series (an approach which may, in fact, contribute to the mechanistic mannerisms we attempt to diminish) reading instruction is carried out by teaching words and phrases actually needed in natural environments. Appropriate activities include learning to read directions, recipes, street signs and bus schedules.

The results of a study with mildly mentally handicapped secondary students indicate that when academic skills were applied in job-related performance, the specific academic skills and concepts increased more than when academic instruction was carried out in isolation (Porter, 1980). It is also reasonable to assume that when specific skills are related to a meaningful task, increased competencies for the autistic individual will likely result.

The mildly handicapped autistic child may profit from academic and social interactions in regular pre-school and elementary educational programs for much of the school day (Koegel et al., 1980). In addition, however, direct attention must be given by the special educator to encourage the regular class teacher to utilize strategies most effective with the autistic student and to structure the comprehension of academic,

communication, and social skills to provide maximum benefit from this integration. We cannot afford to simply hope that isolated skills will be understood and used by the student with autism. As pointed out by Stokes and Baer (1977) "train and hope" methods of generalization are not very promising.

Redundance Versus Repetition

Many programs for mentally handicapped individuals concentrate on drill and repetition to teach basic skills. This mode of instruction is considered unproductive when applied to those with autism due to their rigidity to sameness and rituals. Redundance, or the teaching of a concept in a variety of ways, is a more productive means of instruction (Oppenheim, 1974). For example, teaching the child to get the cup, drink from the cup, and put the cup on the table is a more productive way of teaching the child "cup," as well as the function of the cup, than ten trials of "give me cup." Additionally, Rincover (1978) found that varying task instructions by interspersing other activities with the target skill consistently improved the performance of autistic children.

It is important to recognize that when one verbal cue is given to illicit one response, this does not mean that the student will be able to perform that skill in response to cues in the natural environment (Brown et al., 1979a). Therefore, it is preferable to teach skills in the context or situations where the skills will actually be needed. For instance, when the objective is that a child will put on his/her jacket, it is most effective that the child then goes outside. The goal is not only to teach the student to put on the jacket, but that when going outside in cool weather, a jacket is needed. Unfortunately, there are typically not enough of these "natural instructional conditions" throughout the day to provide the practice which may be needed (Brown et al., 1979a). Instruction under artificial conditions must therefore occur. Nevertheless, it is important to recognize that because a child can put on the jacket in response to a request, the objective is not met until he/she consistently puts it on in response to a variety of natural, unprompted cues (e.g., leaving school, work, or home). This approach, furthermore, assists in reducing the robot-like performance characteristically assumed by many individuals with autism when repeated, rote responding is the method utilized.

Structure

Bartak and Rutter (1976) researched the effects of permissive approaches which emphasized relationships versus structured approaches with a focus on teaching specific skills (Bartak, 1978). Their results found that autistic students attained greater achievement in academic, language and social skills when the environment and the child's responses (a set expectation of what the child is to do) were structured and planned.

The Discrete Trial Format was developed to provide structure to the teaching setting (Donnellan-Walsh et al., 1976). This format consists of specifying (1) the desired student response (student behavior), (2) the discriminative stimulus (the instruction to the student), and (3) the consequence (the teacher's behavior following the child's response).

Discriminative Stimulus - (Instruction)	Response - (Child's Behavior)	Consequence (Teacher's Behavior)
--	----------------------------------	-------------------------------------

For example, when teaching a student to match coins to the sample presented, the discriminative stimulus might be: "Pick up the same." A desired student response would be to pick up a like coin. The consequence, or teacher behavior consequating the child's response, for correct responding by the student might consist of social praise paired with a tangible or token reinforcer.

Discrete Trial Format also includes an Intertrial Interval which is a brief period of time (3-5 seconds) between task trials. The Intertrial Interval allows the teacher to record the correct or incorrect response, reinforce working behavior, and provides for a clear beginning and end to the stimulus (instruction). Initially, when a student is first learning a task, the stimulus should be the same for each trial. When the student is competent in responding to the given stimulus, the instructions should then systematically vary. Planned variations in the stimulus, the desired response and the chosen consequence, increases the chances that the skills learned will generalize and will likely increase the student's overall performance (Rincover, 1978). (See Exhibit 7.)

Instructional Prompts

Autistic individuals frequently attend to an irrelevant cue or a limited part of a stimuli (Koegel et al., 1980) in the learning setting. It may therefore appear that the individual has learned a skill, when in fact he/she may be responding to only a part of a direction or an irrelevant factor included in the stimuli (Lovaas & Schriebman, 1971). Adults may also inadvertently prompt a child. For example, the instructor may look at the correct choice or may point to an object the child has been requested to use, not realizing that the child may be responding to the prompt rather than the stimuli intended (i.e., the verbal direction) (Koegel & Rincover, 1974).

Instructional prompts are stimuli purposefully added to the learning situation which assure correct responding. These vary from demonstrations (showing the child what to do) and "within stimulus prompts" (additions to the task which emphasize the correct response) (Dunlap & Koegel, 1980), to full manual prompts (physically guiding the student through the task).

Dorsey (1980) relates a prompt hierarchy moving from the most intrusive to the least help given. This hierarchy includes full manual guidance, manual (physical assistance), gesture, verbal (verbal instructions), and demonstration (modeling the desired response). For example, if the objective is for the child to pull up his/her pants, the prompt hierarchy will be as follows:

1. Placing your hands over the child's and pulling up his/her pants (full manual guidance).
2. Placing your hands over the child's, physical assistance is given for a portion of the task (i.e., getting the child started).

Exhibit 7

Discrete Trial Format

Student: _____ Stimulus: _____

Prompt: _____ Desired Response: _____

Reinforcement: _____

Trial:

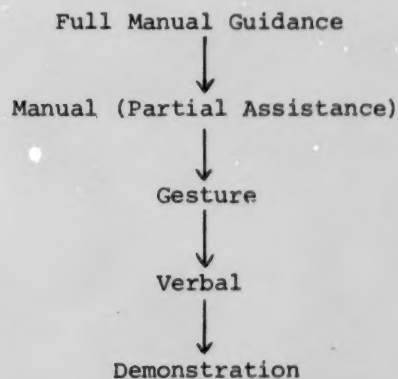
Date	1	2	3	4	5	6	7	8	9	10	% Correct

Source: Based on Discrete Trial Format, Donnellan-Walsh et al., 1976.

3. Give the verbal direction to "pull up pants" (verbal) or move your hands up to your side, giving the gesture of pulling up pants (gesture).
4. Show the child what to do (demonstration).

The least intrusive prompt is preferable and is specified in the student's educational plan (Bates, Renzalia & Wehman, 1979). The prompt is faded as soon as possible, or a less intrusive prompt is chosen.

Prompt Hierarchy
(most intrusive to least intrusive)



Ecological Inventory Strategy

The Ecological Inventory Strategy is a process for the development of a chronological age-appropriate functional curriculum designed by Brown et al. (1979a). This strategy advocates instruction in the most relevant areas needed by the student and is referenced to the local community. The following steps in the development of an Ecological Inventory are provided by Brown et al. (1979a):

- Phase 1: Decide upon the curriculum domains (domestic, vocational, leisure/recreational, community functioning, interactions with nonhandicapped).
- Phase 2: Decide the natural environments in which the student presently functions or will function in the future (parent's home, group home, sheltered apartment).
- Phase 3: Inventory the "subenvironments."
- Phase 4: Decide upon and inventory the activities that occur in that subenvironment.
- Phase 5: Specify the skills needed by the individual to participate in those activities.
- Phase 6: Plan and implement the strategies for performance of the skills in the natural environments.

Example:

Phase 1: Domain: Leisure/Recreation

Phase 2: Environment: Group home

Phase 3: Subenvironment: Living room

Phase 4: Activity: Listening to records

Phase 5: Skills: (1) determine that this will not interfere with another's activities; (2) take record from jacket; (3) put record on turntable; (4) turn on player; (5) place the needle on record; (6) when the record stops, take it off; (7) put record in jacket; (8) choose to either turn off the player or put on another record.

Phase 6: Design and carry out the program including strategies to facilitate generalization to other settings (e.g., community recreational facility). Make necessary modifications for the handicapped person (e.g., tagging favorite records).

Utilizing this plan, instruction can be designed in the areas determined most important for each individual. Ecological Inventories can be conducted for vocational, domestic, and recreational options which are available to an individual in his/her home community. In addition, modifications in specific skills can be made to enable the student to successfully complete the activity, leading to a truly individualized curricula for the student with autism.

Summary

The teacher of children with autism must plan for one-to-one, small group and independent instructional settings. Structuring the learning environment and task, a necessary component of a curricula, can be accomplished by utilizing techniques such as Discrete Trial Format and the Ecological Inventory Strategy. Attention must also be given to specific teaching techniques such as teaching via redundancy rather than repetition and the use of an instructional prompt hierarchy.

GENERALIZATION AND MAINTENANCE

Generalization (behaviors learned in the teaching or training setting are demonstrated in other settings and situations) and maintenance (demonstrating the behaviors over time) strategies must be included in the autistic child's curricula. Teaching can only be determined effective if the student actually uses his/her skills. We know that skill generalization does not automatically occur (Stokes & Baer, 1977). For the autistic child, who frequently may cue into only one stimuli (which may, in fact, be an irrelevant one) planning for the transfer of skills is necessary. Several studies have shown that although learning occurs for the child with autism, this learning neither generalizes to new situations nor maintains over time unless provisions are included enabling this to

Exhibit 8

Ecological Inventory
(Example)

Student: _____

Curriculum Domain: Domestic

Environment: Parent's home

Subenvironment: Kitchen

Activity: Cooking Soup

Skills:

Modifications:

Identify can of soup

Soup must be placed on counter

Open can (electric can opener)

Pour soup in pan

Fill can with water

Pour water in pan

Turn on stove

Color code dial with corresponding burner

Set timer to 15 minutes

Mark on timer to indicate 15 minutes

Stir soup

Turn off stove when timer rings

Plan for use: (Include prompts and reinforcement) (1) Jerry will cook
a can of soup at home with verbal prompts from mother; (2) Jerry will
cook a can of soup at home without verbal prompts. Reinforcers: Verbal
praise, eating the soup

Source: Based on Ecological Inventory Strategy, Brown et al., 1979a.

Exhibit 9
Ecological Inventory

Student: _____

Curriculum Domain: _____

Environment: _____

Subenvironment: _____

Activity: _____

Skills:

Modifications:

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Plan for use: (Include prompts and reinforcement) _____

Source: Based on Ecological Inventory Strategy, Brown et al., 1979a.

happen (Koegel & Rincover, 1974; Russo & Koegel, 1977; Ragland, Kerr & Strain, 1978; Strain, Kerr & Ragland, 1979).

When a skill is "mastered" in a given situation or setting, the only thing we can be fairly certain of is that the student can perform that skill in that setting under those specific teaching conditions. We cannot assume that the student will be able to actually use the skill outside of the teaching setting. Walker (1979) views changes in behaviors or learning as a two-stage process. Stage one consists of strategies to change the behavior. Stage two consists of a second set of strategies to assure that the learned behavior is applied over time and in other environments. Thus, our teaching of autistic students must not overlook this second, critical aspect of the child's curricula.

Principles which enhance generalization and maintenance are related to (1) the instructional setting, materials, and teaching personnel; (2) systems of reinforcement; and (3) task instruction.

Teaching Setting, Materials, and Personnel

The principle of training implies that generalization is facilitated when the setting in which the training or teaching occurs closely resembles the natural setting where the skill will be used (Goldstein, 1981). Hence, when simulation must be used in lieu of teaching in the natural environment, the tasks and materials (Identical Elements, Buckley & Walker, 1978), as well as the physical setting should be as much like the natural setting as possible. As suggested earlier, teaching in the natural environment will circumvent this need (Walker, 1979).

The actual use of a skill or concept is also facilitated by teaching the skill in a variety of settings and in response to a variety of persons (Stokes & Baer, 1977; Stokes, Baer & Jackson, 1974). This includes teaching skills in several different work areas in the classroom or vocational setting, and planning for skill use at home (in response to parents and siblings), at work (in response to supervisors and peers) or school (in response to other teachers and school personnel), and in the general community.

An additional method to enhance generalization focuses on changes in the environment which will support the child's new behaviors (Walker, 1979). This involves instructing parents, siblings, peers, and school personnel in strategies which are reinforcing to the student when a given behavior or skill is performed.

Reinforcement Systems

Providing reinforcement when the student demonstrates the desired skill or behavior in the natural setting (Stokes & Baer, 1977), then gradually thinning the reinforcement schedule (Koegel & Rincover, 1977) are other generalization and maintenance methods which have proven successful. Using reinforcement that occurs naturally in the environment, such as smiling and a pleasant thank you (initially social reinforcement may need to be paired with a stronger, tangible reinforcer) will increase the chances that the student will be reinforced by others outside of the teaching setting (Stokes & Baer, 1977).

Task Instruction

Overlearning, or learning to a mastery level (Goldstein, 1981) increases the likelihood that the skill will be used outside of the teaching setting. It is important to emphasize that overlearning for the autistic child should occur by redundancy (teaching the same skill or concept in a variety of ways), rather than requiring that the same task be repeated (Oppenheim, 1974). Even though we feel a student has learned a competency in the classroom or home setting, it is necessary that the instruction be withdrawn systematically, rather than stopped abruptly (Buckley & Walker, 1978). Instructing the student to use the skill when a situation suggests its use (Instructed Generalization) also facilitates the continued performance and transfer of the skill (Stokes & Baer, 1977).

The following outline lists generalization and maintenance strategies which can be incorporated into the autistic child's individual curricula.

Teaching Strategies for Autistic Children Which Enhance Skill Generalization and Maintenance

(Instructional setting, materials, and personnel)

1. Instruction in natural environments (Walker, 1979).
2. Group instruction (Stokes & Baer, 1977; Stokes et al., 1974).
3. Training of peers, teachers, parents to reinforce skill use and desirable behaviors (Stokes et al., 1974).
4. Use of natural, rather than artificial, teaching materials (Buckley & Walker, 1978).
5. Teaching the same concept in a variety of situations and settings (Stokes & Baer, 1977; Wahler, 1969).

(Reinforcement)

6. Reinforcement when the desired behavior occurs (Stokes & Baer, 1977).
7. Gradually decreasing the frequency of reinforcement for performance (Koegel & Rincover, 1977).
8. Emphasis on functional skills (those skills which the student will have the opportunity to use and be reinforced for).
9. Providing for natural reinforcement (reinforcement likely to occur in the natural environment) paired with other reinforcement if necessary (Stokes & Baer, 1977).

(Task Instruction)

10. Overlearning a competency through instruction via a variety of tasks which utilize the skill (Goldstein, 1981).

11. The systematic withdrawal of the teaching. Utilizing periodic review and reteaching (Buckley & Walker, 1978).
12. The use of prompts to encourage the student to perform the skill (a form of Instructed Generalization) (Stokes & Baer, 1977).
13. Systematically moving to less intrusive prompt stimuli, then fading the prompt (Buckley & Walker, 1978).

PROGRESS DOCUMENTATION

Recording a child's achievement in both direct teaching settings and in the natural environment is necessary to insure that targeted skills are learned, maintained and generalized. This process includes (1) identifying the target skill; (2) observing the skill in the natural environment; (3) identifying skill components; (4) observing the child's ability on each component; (5) on-going progress charting; (6) interventions are implemented; (6) maintenance checks and generalization strategies being carried out; and (7) observations made in the natural environment.

The first phase of documentation consists of observing the global skill in a natural setting (the situation where the skill ultimately is to be used) (Dunlap & Koegel, 1980). Next, a task analysis of the skill is conducted and each component is described. The child's competence in each component of the skill is then observed (Bates et al., 1979). As teaching strategies are implemented, systematic daily recording (or regular data probes) of the child's performance should also occur. Through this procedure of systematic recording, the manner of presentation, instructional prompts, and specific reinforcement strategies can be adjusted to provide for further progress (Bates et al., 1979). When the initial performance criteria has been achieved, strategies are then developed to maintain and generalize the competency. Before mastery of the skill can be assumed, the student's performance in the natural setting must again be observed.

For example, the specific objective for eight-year-old Billy is to appropriately greet a peer in natural social settings, such as the school playground. The greeting behavior is observed in this setting and recorded on Billy's Data Sheet. (See Exhibit 10.) Specific components of this skill may include: looking in the direction of the person; smiling; saying hello; then walking on. A starting point may be to teach Billy to greet classmates in the classroom, using verbal prompting. However, the ultimate objective is not achieved until Billy greets familiar students on the playground and other settings in the absence of the teacher.

REINTEGRATION AND INTERACTIONS WITH NONHANDICAPPED

Three types of interactions with nonhandicapped individuals are included in reintegration (Brown, Branston, Hamre-Nietupski, Johnson, Wilcox & Gruenewald, 1979b). These authors delineate these interactions as: (1) proximal (those placing handicapped and nonhandicapped people together in common locations, such as riding the bus, eating lunch, etc.); (2) helping (the nonhandicapped students act as assistants to the handicapped in activities, either informally or through structured activities);

Exhibit 10

Student Data Sheet
(Progress Summary)

Name: _____

Skill/Objective: _____

Post-Intervention

Observation: Date(s): _____ Setting(s): _____

Pre-Intervention

Observation: Date(s): _____ Setting: _____

Description of Behavior: _____

Maintenance

Description of Behavior: _____

Maintenance Strategies: _____

Date: _____ Setting: _____ Description of Behavior: _____

Intervention

Skill Components:	Pre-Assessment	Post-Assessment
	Date Description	Date Description

Generalization

Generalization Strategies: _____

Date: _____ Setting: _____ Description of Behavior: _____

and (3) reciprocal (both the nonhandicapped and handicapped receive benefit from the interaction, for example, games which are enjoyed by both individuals).

Reintegration of autistic students, for the most part, has consisted of placing the child with autistic classmates in a public school setting. Although this type of integration is a prerequisite to the other forms of integration, this alone does not provide for the least restrictive educational option for the autistic individual (Brown et al., 1980; Stainback & Stainback, 1980). To meet the goal that handicapped individuals live productively in the community, interactions with non-handicapped persons must occur by not only allowing the handicapped to participate in the same physical setting, but also in direct, planned interactions which will benefit the nonhandicapped and handicapped together.

Hamre-Nietupski and Nietupski (1980) advocate for a combination of formal and informal integration methods to facilitate proximal reintegration of the severely handicapped. These methods include ones implemented prior to actual reintegration, such as inservice training for special and regular educators, and administrative planning facilitating interaction in areas such as the school lunchroom. Additional activities, such as group sensitization sessions for nonhandicapped students and school personnel, should be included as components of a reintegration plan.

Russo & Koegel (1977) found that young autistic children can be successfully instructed with nonhandicapped children when using behavior modification techniques. These researchers found that when the regular education teacher was instructed in these techniques, the autistic children maintained previously learned acceptable behavior and verbal responses to instructions. Autistic children have also shown to benefit from observing nonhandicapped peers when attention to modeling behavior was prompted and reinforced (Egel, Richman & Koegel, 1981).

The use of peer tutors can be useful for teaching academic and social skills to the autistic child (McHale, Olley, Marcus & Simeonson, 1981; Poorman, 1980; Ragland et al., 1978). These interactions, in addition to meeting the primary goal of learning for the autistic child, also serve to augment the nonhandicapped student's understanding of the child with autism (Strain et al., 1979).

The inclusion of social, play, recreational, and vocational skills in an individualized curricula for the autistic youngster or adolescent teaches the skills which will further the success of reciprocal interactions in natural environments. Concentration of generalization of these skills, thus increasing their utility in local community settings, assists in reciprocal integration in the community as a whole.

PARENTAL INVOLVEMENT

Parents serve a vital role in the development and implementation of the child's or young person's educational program. This involvement should occur in the following ways: (1) identifying particular needs and strengths; (2) acting as co-teachers in school and at home; (3) documenting the students progress in home and community settings; and (4) planning for the future environments in which the student will live and work.

Mealor and Richmond (1980) noted that parents and teachers were not always in agreement regarding the adaptive behavior (the ability to function independently and to accept social and personal responsibility) (Heber, 1961) of mentally handicapped students. It is reasonable to assume that this lack of agreement may also exist with the autistic population. Through the direct involvement of parents, critical needs in the areas of self-help skills, behavior, social skills, and community functioning can be realistically identified. Parents also can relate information about the problems which interfere with home and community living, in addition to the child's specific areas of interest. Such parental input is needed to increase the child's chances of successfully adapting to his/her individual family environments (Lansing & Schopler, 1980).

Because skills learned by an autistic child tend to be specific to the learning situation (Wahler, 1969), parents and siblings should be involved directly in the school setting whenever possible. This involvement can provide for the generalization of skills to the home setting and to a variety of natural environments in which the child and parents interact (Lovaas, Koegel, Simmons & Long, 1973; Hensley, Howlin, Berger, Hersov, Holbrook, Rutter & Yule, 1978). Furthermore, parents can relate the skills which are used spontaneously and consistently at home and in the community.

As the autistic individual approaches adulthood, priority skill areas and goals should be selected with consideration given to those which will enhance the least restrictive domestic and vocational options. Parents must be involved in these critical decisions. Appropriate education for the autistic individual is a joint venture if the most promising outcome for the autistic person is to be achieved.

INDIVIDUAL TRANSITION PLAN

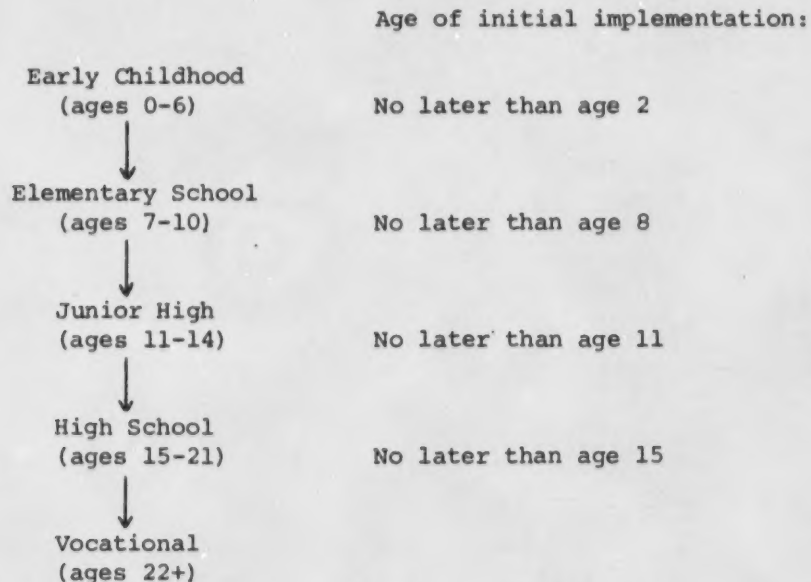
It is recognized that academic, social, and communication skills do not automatically generalize. This creates an additional problem for the individual with autism. To facilitate the handicapped student's adjustment to future school and community environments, a Transition Plan must be designed and implemented (Brown et al., 1981).

The nonhandicapped student is oriented to the next school environment (e.g., junior high, high school) typically on a one-day visit to that setting. This type of orientation is not sufficient for the handicapped child. The alternative is development of an Individual Transition Plan (Brown et al., 1981) which structures the generalization of skills and provides for direct instruction in the competencies needed for functioning in the next prospective setting. This plan involves the child's parents, personnel presently working with the child, and those persons who will be involved with him/her in the future setting.

An inventory of skills needed in the future environment will be developed, including the type of materials and tasks required. Objectives are then set to meet these goals. If the prospective future work setting for a severely handicapped adolescent is a sheltered workshop, for example, an inventory of that setting will be conducted. The individual will then be instructed in such tasks as traveling to and from

the workshop, independent work habits, and methods of requesting job-related assistance. The student will also experience a variety of sheltered workshop tasks in a variety of simulated settings and the natural environment of the workshop itself.

Such a plan is necessary to facilitate transition from one environment to another for the autistic child or adolescent. Following is a timeline to guide the implementation of an Individualized Transition Plan (Brown et al., 1981):



CONCLUSION

As was stated at the outset of this chapter, it is not feasible to develop a single curriculum that will meet the diverse needs of children and youth with autism. Such an approach has been questioned in other areas of special education as well. Rather than emphasizing such a fixed model this chapter has focused on a dynamic curriculum model following the assessment of the child's cognitive abilities, chronological age, socialization skills and communication and behavioral status. Such an assessment should lead to the development of a truly individualized educational program.

The primary goal of this chapter has been to describe the process for arriving at such an individualized educational program. The elements of an educational program serving children and youth with autism that have been emphasized in this chapter include (1) identification of curricular domains and skills; (2) teaching methods and materials; (3) strategies to facilitate generalization and maintenance; (4) progress documentation; (5) reintegration strategies; (6) home involvement; and (7) transition plans. Throughout this chapter I have relied heavily on relevant research, when available, to support the particular strategies being presented. This was done with the confidence that practitioners will verify the usefulness of the procedures presented.

REFERENCES

- Alberto, P., Jobes, N., Sizemore, A., & Doran, D. A comparison of individual and group instruction across response tasks. JASH, 1980, 5(3), 285-293.
- Bartak, L. Educational approaches. In M. Rutter and E. Schopler (Eds.), Autism: A reappraisal of concepts and treatment. New York: Plenum Press, 1978.
- Bartak, L., & Rutter, M. Differences between mentally retarded and normally intelligent autistic children. Journal of Autism and Childhood Schizophrenia, 1976, 6(2), 109-120.
- Bates, P., Renzalia, A., & Wehman, P. Characteristics of an appropriate education for severely handicapped students. Unpublished paper, Southern Illinois University, Carbondale, 1979.
- Bellamy, G. T., & Wilcox, B. Secondary education for severely handicapped students: Guidelines for quality services. In B. Wilcox and A. Thompson (Eds.), Critical issues in educating autistic children and youth. U.S. Department of Education, Office of Special Education, November, 1980.
- Brown, J. Long-term follow-up of 100 "atypical" children of normal intelligence. In M. Rutter and E. Schopler (Eds.), Autism: A reappraisal of concepts and treatment. New York: Plenum Press, 1978.
- Brown, L., Branston, M., Hamre-Nietupski, S., Johnson, F., Wilcox, B., & Gruenewald, L. A rationale for comprehensive longitudinal interactions between severely handicapped students and nonhandicapped students and other citizens. AAESPH Review, 1979, 4, 3-14.
- Brown, L., Branston, M. B., Hamre-Nietupski, S., Pumpian, I., Certo, J., & Gruenewald, L. A strategy for developing chronological-age-appropriate and functional curricular content for severely handicapped adolescents and young adults. The Journal of Special Education, 1979, 13(1).
- Brown, L., Branston-McClean, M. B., Baumgart, D., Vincent, L., Falvey, M., & Schroeder, J. Using the characteristics of current and subsequent least restrictive environments in the development of curricular content for severely handicapped students. AAESPH Review, 1979, 4(4), 407-424.
- Brown, L., Falvey, M., Vincent, L., Kaye, N., Johnson, F., Ferrara-Parrish, L., & Gruenewald, L. Strategies for generating comprehensive, longitudinal and chronological age-appropriate individual educational plans for adolescent and young adult severely handicapped students. Journal of Special Education, 1980, 14, 199-216.
- Brown, L., Nietupski, J., & Hamre-Nietupski, S. Criterion of ultimate functioning. Hey, don't forget about me: New directions for serving the severely handicapped. Council for Exceptional Children, 1976.

- Brown, L., Pumpian, I., Baumgart, D., Vandeventer, P., Ford, A., Nisbet, J., Schroeder, J., & Gruenewald, L. Longitudinal transitional plans in programs for severely handicapped students. Exceptional Children, 1981, 47(8), 624-630.
- Brown, L., Wilcox, B., Sontag, E., Vincent, B., Dodd, N., & Gruenewald, L. Toward the realization of the least restrictive environments for severely handicapped students. AAESPH Review, 1977, 2, 195-201.
- Buckley, N. K., & Walker, H. M. Modifying classroom behavior (revised): A manual of procedures for classroom teachers. Champaign, Illinois: Research Press, 1978.
- DeMyer, M. K. Parents and children in autism. New York: John Wiley & Sons, 1979.
- Dewey, M. A. Recreation for autistic and emotionally disturbed children. Washington, D.C.: Office of Program Coordination, Citizens Participation Branch, National Institute of Mental Health, 1973.
- Donnellan, A. M. An educational perspective on autism: Implications for curriculum development and personnel development. In B. Wilcox and A. Thompson (Eds.), Critical issues in educating autistic children and youth. U.S. Department of Education, Office of Special Education, November, 1980.
- Donnellan, A., Falvey, M., Pumpian, I., Baumgart, D., Schroeder, J., & Brown, L. A strategy for evaluating educational programs for students with autism and other handicapping conditions. In L. Brown, M. Falvey, I. Pumpian, D. Baumgart, A. Ford, J. Schroeder, and R. Loomis (Eds.), Curricular strategies for preparing severely handicapped students to function in a variety of natural community environments. Vol. X. Madison, Wisconsin: Madison Metropolitan School District, 1980.
- Donnellan-Walsh, A., Gossage, L. D., LaVigna, G. W., Schuler, A., & Traphagen, J. D. Teaching makes a difference: A guide for developing successful classes for autistic and other severely handicapped children. Santa Barbara County Schools, 1976.
- Dorsey, B. Teaching the autistic child--the use of prompts. Unpublished paper, The University of Iowa, Iowa City, 1980.
- Dorsey, B. A brief survey of leisure skills and recreational activities. Des Moines, Iowa: Presentation made at Special Study Institute, Programming for Autistic Children and Young Adults, 1981.
- Dunlap, G., & Koegel, R. L. Programming the delivery of instruction for autistic children. In B. Wilcox and A. Thompson (Eds.), Critical issues in educating autistic children and youth. U.S. Department of Education, Office of Special Education, November, 1980.
- Egel, A., Richman, G., & Koegel, R. Normal peer models and autistic children learning. Journal of Applied Behavior Analysis, 1981, 14, 3-12.

- Everard, M. P. Mildly autistic young people and their problems. Huntington, West Virginia: National Society for Autistic Children, 1976.
- Falvey, M., Ferrara-Parrish, P., Johnson, F., Pumpian, I., Schroeder, J., & Brown, L. Curricular strategies for generating comprehensive, longitudinal and chronological age appropriate functional individual vocational plans for severely handicapped students. Madison, Wisconsin: University of Wisconsin and Madison Metropolitan School District, 1979.
- Goldstein, A. P. Psychological skill training: The structured learning technique. New York: Pergamon Press, 1981.
- Hamre-Nietupski, S., Ford, A., Williams, W., & Gruenewald, L. Sex education and related home and community functioning skill programs for severely handicapped students: Toward appropriate functioning in less restrictive environments. Vol. III, Part 2. Madison, Wisconsin: University of Wisconsin, Madison Metropolitan School District, and University of Vermont, 1978.
- Hamre-Nietupski, S., & Nietupski, J. Formal and informal methods toward ensuring that severely handicapped students become an integral part of their regular school environments. In J. Nietupski, S. Hamre-Nietupski, G. A. Schuetz, and L. Ockwood (Eds.), Severely handicapped students in regular schools: A progress report 1979-80. Milwaukee, Wisconsin: Milwaukee Public Schools, 1980.
- Heber, R. Modifications in the manual on terminology and classification in mental retardation. American Journal of Mental Deficiency, 1961, 65, 499-500.
- Hensley, R., Howlin, P., Berger, M., Hersov, L., Holbrook, D., Rutter, M., & Yule, M. Treating autistic children in a family context. In M. Rutter and E. Schopler (Eds.), Autism: A reappraisal of concepts and treatment. New York: Plenum Press, 1978.
- Koegel, R. L., Egel, A. L., & Dunlap, G. Learning characteristics of autistic children. In W. Sallor, B. Wilcox, and L. Brown (Eds.), Methods of Instruction for Severely Handicapped Students. Baltimore, Maryland: Paul H. Brooks, 1980.
- Koegel, R. L., & Rincover, A. Treatment of psychotic children in a classroom environment: I. Learning in a large group. Journal of Applied Behavior Analysis, 1974, 7, 45-59.
- Lansin, M. D., & Schopler, E. Individualized education: A public school model. In M. Rutter and E. Schopler (Eds.), Autism: A reappraisal of concepts and treatment. New York: Plenum Press, 1978.
- Lotter, V. Follow-up studies. In M. Rutter and E. Schopler (Eds.), Autism: A reappraisal of concepts and treatment. New York: Plenum Press, 1978.

- Lovaas, O. T., Koegel, R. L., Simmons, J. Q., & Long, J. Some generalization and follow-up measures on autistic children in behavior therapy. Journal of Applied Behavior Analysis, 1973, 6, 131-166.
- Lovaas, O., & Schreibman, L. Stimulus overselectivity of autistic children in a two stimulus situation. Behaviour Research Therapy, 1971, 9, 305-310.
- McHale, J. M., Olley, J. G., Marcus, L. M., & Simeonsson, R. J. Non-handicapped peers as tutors for autistic children. Exceptional Children, 1981, 48(3), 263-264.
- Mealor, D. J., & Richmond, B. O. Adaptive behavior: teachers and parents disagree. Exceptional Children, 1980, 46(5), 386-389.
- Oppenheim, R. C. Effective methods for teaching autistic children. Springfield, Illinois: Charles C. Thomas, 1974.
- Poorman, C. Mainstreaming in reverse with a special friend. Teaching Exceptional Children, 1980, 12(4), 136-142.
- Porter, M. E. Effect of vocational instruction on academic achievement. Exceptional Children, 1980, 46(6), 463-464.
- Prior, M. R. Cognitive abilities and disabilities in infantile autism: A review. Journal of Abnormal Child Psychology, 1979, 7(4), 357-380.
- Ragland, E. U., Kerr, M. M., & Strain, P.S. Effects of social initiations on the behavior of withdrawn autistic children. Behavior Modification, 1978, 2, 265-278.
- Ricks, D. M., & Wing, L. Language, communication and the use of symbols. In L. Wing (Ed.), Early childhood autism. New York: Pergamon Press, 1976.
- Rincover, A. Variables affecting stimulus-fading and discriminative responding in psychotic children. Journal of Applied Behavior Analysis, 1978, 87, 541-553.
- Ritvo, E. R., & Freeman, B. J. Definition of the syndrome of autism. Huntington, West Virginia: National Society for Autistic Children, June, 1977.
- Russo, D. C., & Koegel, R. L. A method for integrating an autistic child into a normal public school classroom. In S. Stainback and W. Stainback (Eds.), Educating children with severe maladaptive behaviors. New York: Grune and Stratton, Inc., 1980.
- Rutter, M. Diagnosis and definition. In M. Rutter and E. Schopler (Eds.), Autism: A reappraisal of concepts and treatment. New York: Plenum Press, 1978a.

- Rutter, M. Developmental issues and prognosis. In M. Rutter and E. Schopler (Eds.), Autism: A reappraisal of concepts and treatment. New York: Plenum Press, 1978b.
- Rutter, M. Language disorder and infantile autism. In M. Rutter and E. Schopler (Eds.), Autism: A reappraisal of concepts and treatment. New York: Plenum Press, 1978c.
- Schopler, E., Reichler, R. J., & Lansing, M. Individualized assessment and treatment for autistic and developmentally disabled children: Vol. II. Teaching strategies for parents and professionals. Baltimore, Maryland: University Park Press, 1980.
- Simonson, L. R. A curriculum model for individuals with severe learning and behavior disorders. Baltimore, Maryland: University Park Press, 1979.
- Stainback, S., & Stainback, W. Educating children with severe maladaptive behaviors. New York: Grune and Stratton, Inc., 1980.
- Stokes, T. F., & Baer, D. M. An implicit technology of generalization. Journal of Applied Behavior Analysis, 1977, 10, 349-368.
- Stokes, T. F., Baer, D. M., & Jackson, R. L. Programming the generalization of a greeting response in four retarded children. Journal of Applied Behavior Analysis, 1974, 7(4), 599-610.
- Strain, P. S. Social behavior programming with severely handicapped and autistic children. In B. Wilcox and A. Thompson (Eds.), Critical issues in educating autistic children and youth. U.S. Department of Education, Office of Special Education, November, 1980.
- Strain, P. S., Kerr, M. M., & Ragland, E. U. Effects of peer-mediated social initiations and prompting/reinforcement procedures in social behavior of autistic children. Journal of Autism and Developmental Disorders, 1979, 9, 41-54.
- Wahler, R. G. Setting generality: Some specific and general effects of child behavior therapy. Journal of Applied Behavior Analysis, 1969, 2(4), 239-246.
- Walker, H. M. The acting out child: Coping with classroom disruptions. Boston, Massachusetts: Allyn & Bacon, 1979.
- Wehman, P. Instructional strategies for improving toy play skills of severely handicapped children. AAESPH Review, 1979, 4(2), 125-135.
- Wing, L. Early childhood autism. New York: Pergamon Press, 1976.
- Wing, L., & Gould, J. Social interaction of the autistic child. Journal of Autism and Developmental Disorders, 1979, 9(1).
- Wolfensberger, W. The principle of normalization in human services. Toronto: National Institute on Mental Retardation, 1972.

Communication: New Perspectives on Assessment and Treatment

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COMMUNICATION:

NEW PERSPECTIVES ON ASSESSMENT AND TREATMENT

James E. McLean
Lee K. Snyder-McLean

INTRODUCTION AND ORGANIZING PERSPECTIVES

Communication Problems of Children with Autism

Children with autism present one of the most demanding tasks imaginable to educators. The goals of special education today include preparing children to live productively in more "normalized" environments with the least possible restrictions. Such goals reflect an expectation that even severely handicapped children can acquire behaviors that are socially appropriate and productive, and that they can utilize their more normalized environments to acquire ever improving skill repertoires. Yet, when we look at the young child with autism, we often see a child who presents a collection of behaviors that offer severe deterrents to the attainment of these goals. Such children often display bizarre self-stimulatory rituals. They prefer isolation from other people and spend much of their time resisting attempts to interact by their parents and teachers. Such children most often have severely deficient communication and language and, in fact, often produce apparently meaningless echolalic repetitions of words and phrases that they have heard from their caregivers or from the commercials which dominate the television screen. Further, such children show little desire or skill for regulating their behaviors according to the patterns they observe among the other people in their environments. With such discrepancy between existing behaviors and educational goals, the child with autism is, indeed, a challenge in all training domains.

Since it is the most basic role of educators to design around the problems presented by handicapped learners, it is important to look for the factors involved in autism, and children with autism, that might help to point the way for such designs. There are encouraging indications that recent research might offer some new strategies in these design tasks.

First, and perhaps foremost, there have been changes in our views about the basic nature of autism and its causes. Long viewed as a problem of severe psychological disturbance, autism is coming to be viewed more as reflecting a wide range of cognitive, perceptual, and processing deficits (Rutter & Bartak, 1971). While, of course, such pervasive deficits are obviously devastating to the development of normal human behaviors, the effects of these particular types of deficit are more appropriately and directly attacked educationally than in the deep, psychogenic bases previously accepted as the etiology of autism. Further, research offers at least tentative indications that the severe behavioral deficits which characterize the young child with autism begin to lessen as such children grow beyond age five or six (Robinson & Robinson, 1976).

Obviously, such symptom reduction doesn't occur for all autistic children and the child of school-age who hasn't acquired language and who still manifests significantly retarded mental functioning has a relatively pessimistic prognosis.

However, the indications of at least some diminution in symptomatology and some educationally targetable aspects of those symptoms have been strengthened by at least some limited success in behavioral treatment of children with autism. Until very recently, the most prominent treatment methods for this population have been straightforward behavioral programs applied to increase social behaviors and speech (Lovaas & Koegel, 1973). Such programs have traditionally stressed intrusive shaping and imitation procedures, with aversive consequences used contingently to punish undesirable or interfering behaviors.

Such behavioral programming is generally supported by a "remedial teaching" model (Guess, Baer & Sailor, 1978) which suggests that desired responses be directly targeted and that so-called pre-requisites to these desired behaviors be generally ignored. Thus, in communication and language, behavioral treatments most often use imitation, punishment and reinforcement to target speech and the standard grammar structures common to adult language. Thus, autistic children have been trained most often to name things and to make statements to, and requests of, other people in their environments by production of certain standard utterances. Such programming has been most often described as "functional" language training and, while successful to some extent, usually has resulted in children with a stock of limited phrases that have been intensively trained, which are emitted only in highly specific contexts. Generalization of such trained responses to novel, untrained situations has been a consistent problem among autistic and other severely handicapped children (Guess et al., 1978).

Revisions in Theoretical Models for Communication and Language

The past decade has seen dramatic expansion in the body of knowledge about communication and language. Based primarily on extensive descriptive research carried out on the development of communication and language by normally developing children, this new knowledge gives the educator and speech-language specialist a much broader view of such behavior. Interestingly, these new data also give the professional a much more detailed view of all of the dimensions involved in human communication. These dimensions include the meanings, the structures, and the social purposes of early child language as it actually occurs. These data also provide important descriptions of the communicative behaviors that occur before any actual language emerges. Together, these recent data offer entirely new perspectives for the assessment and treatment of severe language problems such as those manifest in children with autism.

In this chapter, we shall be reviewing these data and identifying the assessment and treatment perspectives they support. After looking at these data and perspectives in some general way, we shall discuss their specific applications to communication programming for children with autism.

SOCIALIZATION AND COMMUNICATION

The Purposes and Behaviors of Communication

Despite all of the concentration on "functional" language training, treatment programs directed toward severely language deficient children and youth have not reflected much real sensitivity to the basic purposes or functions of human communication systems. An analysis of most of our existing language treatment programs for severely handicapped students would lead one to believe that the primary functions of human communication systems are to name things, indicate desired food items or objects, and to request permission to "go bathroom." While such functions are surely included in children's communicative repertoires, they are far from adequate to represent a full appreciation of the basic function of communication in human societies. If, however, we consider the broader views of communication that are suggested by both linguistic philosophers and child language researchers, we are re-sensitized to the fact that human communication functions to maintain cooperative and productive interaction among people (DeLaguna, 1963). As such, then, communication is first and foremost a social tool. Further, communication with other people exists long before a child has language (Mahoney, 1975). Thus, with the refined perspectives and data that are now available, it is possible to assess and target communicative behaviors at pre-language levels with both some extremely fine-grained perspectives on the behaviors involved, and some fine-grained perspectives on the functional variables which occur in human assemblies to signal and reinforce such communicative responses. With such perspectives, the educator and speech-language specialist can now consider communication training in terms separate from pure speech and language training. This seems particularly desirable with severely handicapped children, including those with autism, who have proved to be somewhat resistant to existing language treatment programs.

Communicative Behaviors Before Language

Because children with autism are often echolalic and imitate speech so readily, without seeming to understand the meaning or function of their utterances, it seems particularly facilitating to be able to assess their communicative repertoires, and even target initial communicative skills, at non-language levels. By analyzing the pre-linguistic communicative behaviors of normally developing children, we can identify the kinds of behaviors which can be used for such assessment and targeting.

There are three major stages of pre-linguistic behavior which have significance for communicative development. First, there is the behavior of very young infants which is not specifically communicative behavior, but to which adult caregivers assign some communicative significance. For example, a young infant may look at a toy that is within his visual field and show some excitation behavior. A nearby adult most often treats such behavior as though it is intended to be communicative and begins to comment on the toy to the child and, perhaps, may retrieve the toy and offer it to the child for play. In such conditions, adults might respond to the child's looking and excitation behavior, by stating what they think the behavior "means," e.g., "Oh, you like that teddy? Here he is. Say, 'hello' Teddy." In this way, adults begin to interpret even

the most primitive infant behavior as though it were communicative in intent.

As children begin to be a little more skilled in their sensori-motor behaviors, they can both look at an object and reach for it. Although infants at this point still maintain their attention only to the object desired, and do not yet intend such responses to "communicate," nearby adults are quite ready to assign communicative meaning to the infant's behavior, and will attempt to satisfy the intent that they think underlies such behavior.

By about nine months of age, the behavior of normally developing children reflects the fact that they have learned that they can affect the behavior of significant others in their environment by using certain of their own behaviors. By handing a toy to mother or father they can get the adult to wind it up and make it work. By going to the refrigerator and uttering agitated vocalizations, they can get an adult to provide some milk or juice. Although these behaviors are quite primitive in their form, they are quite effective, and children fully expect that adults will respond to such behaviors. At this stage, children have become intentionally communicative and the data indicate that they no longer maintain only their single orientation to the desired referent, but alternate their gaze from the adult to the object and back to the adult. This alternating focus is behaviorally consistent in young children (Bates, Camaioni & Voltera, 1975) and can be reliably observed by professionals to identify this move to intentional communication.

Soon after these primitive intentional communicative responses have developed, children begin a process of attaining communicative behaviors which are more or less universal in Western cultures. Communicative behaviors at this next level are still non-linguistic, but are highly "conventional" in Western cultures. They consist of a set of gestures: (1) a request gesture; (2) a give gesture; (3) a show gesture; (4) a communicative point gesture; and (5) a ritualized greeting or salutation gesture (Bates, 1979). Most often, these gestures are accompanied by vocalizations that have intonation patterns very similar to standard adult speech.

After the gestural complex has been in place for a few months, normally developing children move into the linguistic stage of communication and begin a process of using spoken words and phrases to communicate their intended messages to other people in their environment. Thus, research shows us clearly that communicative behaviors exist and function quite effectively several months before actual speech or formal language appears.

We have found these definitive levels of communicative development to be quite helpful in assessing severely handicapped children, including those with autism. The behaviors can be reliably observed and allow us to assess a child's relative awareness of his ability to affect the behavior of other people in his environment. Measurement of this awareness, and of the child's motivation for using this communication ability, are most useful in planning a communication treatment program.

Table 1 lists the stages in the emergence of intentional communicative behaviors in normally developing children. The reader will see that we have broken both the pre-intentional stage and the early, non-linguistic but intentional, communication stage into two sub-stages. These four stages have been distinguished because the behaviors exhibited in each of them are different, and these differences are important to assessment of a child's relative level of communicative intentionality.

Communicative Functions

Along with a basic awareness of the developmental continuum for intentional communicative acts, there is a related area of study that professionals working with severely handicapped children should find useful. That area involves recent research into the specific uses to which human infants (and adults) put their communicative ability. In other words, what kinds of effects do humans desire to have on the receivers of their communicative signals?

Again, research data from normal language learning children indicate that, while the earliest prelinguistic signals are primarily designed to evoke helpful or playful actions from adults--it is not long before young children begin to direct adult attention to interesting entities or events that they have perceived in their mutual environment. Also, normally developing children reflect the fact that it is important to respond to adults' communicative acts by answering or replying, and will respond to an adult question with some gesture or other behavior related to the question. Thus, a father might utter, "Where is your truck?" as he and the child are playing with toy trucks and cars. A child of 12-15 months will most often point to the truck, or in some other way reply to the adult's communicative act. Children who do not answer or reply to adults appear quite deviant and, obviously, such deviance can disrupt the most basic interactive patterns of social behavior.

Further, normally developing children begin to ask for information from adult caregivers even before words appear. A child might hold up a toy doggie to show mother, utter an upward inflection and evoke mother's information about the toy--e.g., "Yes, that's a doggie. A doggie goes arrf, arrf!" (Snyder-McLean & McLean, 1978).

Table 2 shows these social communicative functions and others carried-out by child communicative acts using only gestures and intonated vocalizations which precede the emergence of actual speech and language.

When children become linguistic in their communicative acts, their utterances are expected to perform the full-range of social functions that are basic to human interaction. Table 3 shows one possible listing of these expected communicative "performatives." One sees that awarenesses such as these can offer considerable direction to a teacher or clinician who is attempting to design a "functional" communication system for a severely handicapped child. No longer will professionals be limited to thinking about "naming things" or simply "indicating desired object or activity." Rather, educators might concentrate more on making a handicapped child interact communicatively with a peer or an adult caregiver

Table 1

Development of Intentional Communicative Behavior

Stage	Behavior	Adult Reaction
Pre-intentional* but assigned meaning by adult	"Fussing" vocalization	You're unhappy--Let's move you, change you, etc.
reactive	Looks at entity or event of interest	Do you want your teddy? Yes, that's a nice teddy.
proactive	Laughs aloud and repeats previous action in re- sponse to playful inter- action with adult	Oh, you like that, want more? Shall I do it again? Okay, let's do it again.
	Tries to get food beyond reach	Oh, you're hungry. Well, let's eat!
Intentional* but non-linguistic	Extends arms upward to adult--vocalizes uh-uh	You want me to pick you up? Okay, up we go!
primitive	Alternates orientation from adult to desired object	Oh, you want dolly? Look at dolly. Here's dolly.
	Pulls person to desired activity	Want mama to play blocks? Oh, not now.
conventional	Hands cup to adult, points to refrigerator, vocalizes with inflection	More juice? Baby wants more. More juice, okay. Here's more juice.
Linguistic* and intentional	"Help me"--Holds up gloves	Want me to help? Okay. I'll help put the gloves on.
	"Kitty! Look!"	Yes, there's a kitty. I see the kitty.

Source: Bates, 1976.

*Elsewhere, the authors have suggested that these major stages can be more accurately defined using the terms "perlocutionary," "illocutionary," and "locutionary." For a full discussion of this more specific terminology, see McLean, Snyder-McLean, and Sack, 1982.

Table 2

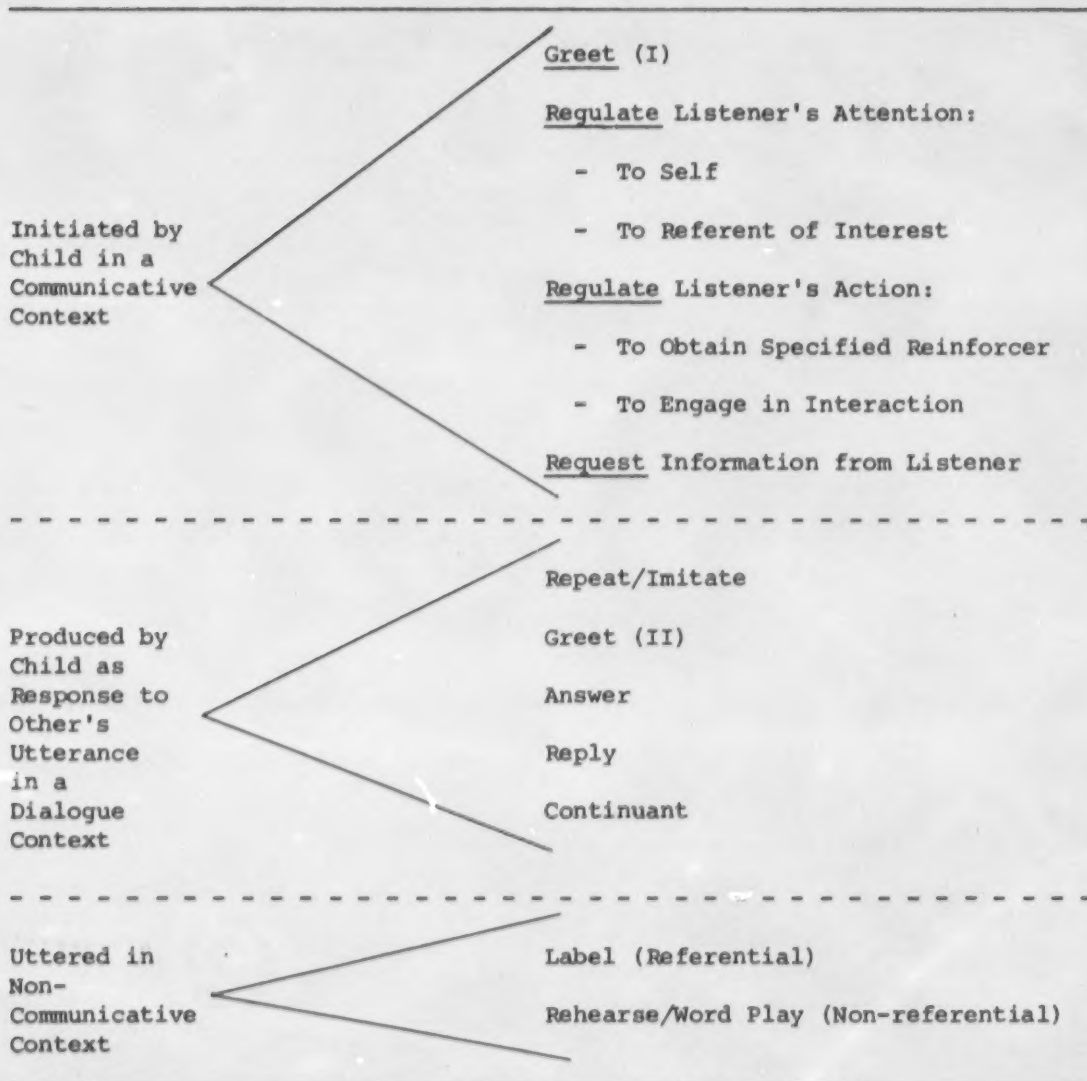
Communication Functions Carried-Out by Children
Before Language is Developed

Type	Definition
Proto-Imperatives ₁ --Consumable-- (Food or drink)	Child directs receiver's attention to consumable item and/or uses reach gesture; is dissatisfied if adult only comments on item--clearly is requesting item
Proto-Imperative ₂ (Non-food related objects, persons, actions)	Same as above, but referent item is a non-consumable object, person, or <u>action</u>
Proto-Declarative	Child uses gestures (point or show) and visual regard to direct receiver's attention to an entity or event of interest--is satisfied by some comment by adult--does not seem to be requesting object
Proto-Interrogative	Child directs receiver's attention to referent of interest and produces vocalization with rising intonation--looks to adult for some answer response
Answer or Reply (Non-verbal)	Child responds to another's utterance with a gesture or action which serves as a relevant answer or response to the other's utterance
Greeting	Child waves and/or vocalizes to signal awareness of the arrival or departure of another person. (May be cued by a similar gesture/vocalization from the other)

Sources: Bates et al., 1975; Dore, 1975; McLean and Snyder-McLean, 1981.

Table 3

Communicative Functions Expressed in Early Child Language



Sources: Derived from the works of: Bruner (1975), Dore (1975), Halliday (1975) and Owens (1978).

or teacher. Such goals seem infinitely richer and more socially valuable than do most of our previous judgments about what to teach such children.

Social Interaction Patterns

Although the communicative signals and the communicative functions described above are inherently interactive, it does seem helpful to consider interactive patterns of human social dyads independently as well. Since autistic children are particularly deficient in the normal interactive or dyadic patterns which people follow in their cooperative roles, a brief look at what research data indicate would seem useful in the context of this chapter.

Human interactions, including communicative acts, generally require certain specific behaviors. As Table 4 shows, these required interactive behaviors include: (1) Attention to the other interactor; (2) Attention to the entity or action around which the interaction is occurring (common focus); (3) Filling one's turn and allowing the other his or her turn; and (4) Maintaining interactive focus by relating one's response to either the common focus of the interaction or to the behavior of the other person.

Table 4

CRITICAL ABILITIES FOR SUCCESSFUL PARTICIPATION IN SOCIAL INTERACTIONS

1. ENGAGE OTHER'S ATTENTION
2. INDICATE OWN ATTENTION TO OTHER
3. ESTABLISH COMMON FOCUS OF ATTENTION
4. FILL TURN/FULFILL ROLE IN JOINT EFFORT TOWARD COMMON GOAL

Source: McLean, Snyder-McLean, Sack and Decker, 1982.

It is important to note that these interactive rules and patterns begin early in children's interactive play with adults (e.g., peek-a-boo) and that these same elements characterize the basic interactive patterns of a mature conversation among adults. Thus, these interactive rituals are critical to early behaviors in and of themselves and have additional importance as the foreshadowings of sophisticated patterns which will obtain throughout life.

Implications of Socialization and Communicative Functions for Children with Autism

The three elements of human communication that have been discussed to this point are all related to the social aspects of communication. The emergence of intentional communicative acts reflects the drive for human beings to establish cooperative relationships and to interact in productive commerce. The orderly emergence of communicative signals--which initially take very primitive forms and then gradually evolve into conventional non-linguistic forms and, ultimately actual culture-specific language forms--reflects the predisposition of the human organism and of human societies to rapidly construct the specialized behaviors needed to support this required cooperative commerce. This conventionalization includes not only the basic elements of the communicative behavioral system itself, but also reflects the rules by which people are allowed and expected to affect one another's behaviors and thus attain productive results from their interaction. Finally, we saw that these interactive behaviors are rather rigidly carried in an overall pattern of reciprocal, turn-taking patterns in which both parties to the interaction are expected to establish and maintain a productive focus to their interaction.

Clearly, the implications of the development of such patterns and such behaviors are profound in their importance to human societies. Clearly, too, humans who do not show the ability to carry-out their appropriate roles in these interactions, or encode their communicative intents in ways that others can understand them, are found difficult to accept and maintain in human societies. The symptomatology of autism is directly concerned with deficits in the kinds of behaviors and interactive patterns that we have been identifying here as basic to social living. Thus, as we think about "normalizing" autistic children's behaviors, we necessarily must think in terms of the behaviors that are considered "normal."

The details about normal human socialization and communicative development that we have discussed in this section would seem to raise important questions about our past programs of treatment for children with autism. For example, does it make sense to target speech or language forms in children who do not yet reflect conventionalized gestural forms of communication, or even intentional communication at any level? Further, have we always been careful to fully assess and describe the level of non-linguistic communicative behaviors a child with autism might have? Even further, if we were to concentrate on the interactive patterns of human social commerce and on pre-linguistic communicative systems (e.g., gestures) could we attain changes in an autistic child's repertoires in these areas? And, if we could attain such changes in the precursors of language, would these function to support better and more robust gains in traditional language and speech responses for such children?

Obviously, we do not yet have answers for all these questions. It does seem, however, that we must obtain such answers. With the richness of our current knowledge about the social bases of communication and the path of development followed by communicative behaviors, as they move from primitive reaching responses through gestures to words and phrases, it would seem that we are at an extremely good point to begin to seek these answers. Given the relatively low success rate of old procedures in this

particular area of handicap, it would seem that we have little to lose in a total reorganization of our model of language and our notions about how language might be trained with children who manifest pervasive interferences in the essential areas of socialization and motivation for interaction basic to language.

The work from this revised model has only begun in the last few years and thus is not extensive or definitive. However, educators and clinicians have begun to report, at least anecdotally, some progress in applying such a model. Importantly, they report that they feel that their work is both more logical and more satisfying to them than past approaches have been. Further, it would appear that, if changes can be attained in the domains that we have discussed so far, the effect of these changes should have significant impact on the behavior of children with autism. Such changes would be truly consonant with our goals of attaining more normalized behaviors which result in easier and more productive acceptance into integrated and less restricted environments.

COGNITIVE DEVELOPMENT AND THE CONTENT AND FORM OF COMMUNICATIVE BEHAVIORS

The current data and perspectives which stress the many dimensions of communication and language, offer another important interest domain in addition to the social/functional dimension. This second major domain concerns the basic relationships which obtain between a person's cognitive development and his or her acquisition of communicative behaviors and language. Obviously, this relationship between language and cognition is a complex one. It is made even more difficult to analyze because of the mentalistic aspects of cognition. Our behavioral traditions and dogma have made it seem both unwise and unproductive to consider events which are "inside" the head. Yet, the nature of language and the overall orderly process of its acquisition parallel to many important cognitive attainments, make the relationship of these two critical behavioral and skill domains impossible to consider in isolation of one another. Intuitively, we all know that language is related to thought. We also realize that both thought and language are made possible by certain brain functions that are unique to humans. Thus, it is increasingly difficult for many of us to maintain the functional behaviorist's position not to consider other dimensions of intelligent human behavior when we consider language. What we must do, however, is to attempt to remain as committed to observable behavior as possible, while also attempting to relate the development of cognitive abilities to the development of communication and language. Fortunately, research has provided a rich collection of descriptive behavioral data for the accomplishment of these ideal methods.

Cognitive abilities are considered the stored knowledge acquired from one's experience with the entities and events of his or her environment. These knowledge bases then, are used in at least two critical ways. First, the experientially gained knowledge is used to guide subsequent behaviors of people. Secondly, this internalized knowledge is translated into observable forms to refer to the various elements of the environment and to experience within that environment. Wolfe and Gardner (1981) stress this dichotomous view of cognitive operations by referring to the knowledge used to guide subsequent behaviors as representation, and they suggest that

such representation undergirds basic concepts such as object permanence, anticipation of certain events in problem-solving tasks, and stored knowledge of space relationships. Wolfe and Gardner (1981) then refer to the translation of internalized knowledge into observable forms as the process of symbolization through gestures, drawings, and/or language forms.

Such a dichotomy of early cognitive operations is well-supported in the data on early child development. Piaget's (1952; 1954) identification of the sensori-motor schemas of object permanence, means-ends, construction of relations object in space, operational causality, and schemes for relating to objects all show an orderly emergence of more and more refined and appropriate representation of the knowledge gained from past experience and the use of this knowledge to guide current behaviors. Similarly, these Piagetian sequences, and the careful descriptions provided by Bates (1979) and her colleagues trace an orderly emergence of symbolization behaviors which translate internal events into observable, referential forms through gestures, object play, and on into language.

It seems quite straightforward to consider that human language requires both of these distinct cognitive abilities. First, language would seem to require a relatively rich collection of internal representations which could be externalized. Second, human language would require the ability to translate those events into symbolic forms. Research of the last decade has confirmed both of these requirements. For example, several researchers (Bloom, 1970; Slobin, 1973; Bowerman, 1973) have analyzed extensive child language-samples and demonstrated that children's early words and language structures map knowledge that they already have. These data have been gathered across several different cultures and languages and, thus, suggest that children's knowledge base is rather universal in its content and that all languages are designed to allow people to "talk" about the same types of entities, actions, and relationships. Slobin (1973) posits that child experiences in various cultures are not all that different and that all environments tend to develop experiences that allow children to "discover" the same general knowledge and representation of the world. Thus, most children begin to communicate and learn language that refers to the same basic relationships.

Table 5 shows the meanings which undergird both single-word and multi-word utterances of young children. These meanings, or the semantics, of child language reflect the representational knowledge that children have constructed through their experiences with the people and things of their environment. The reader can see that these meanings relate primarily to entities, actions, locations, and various relational states surrounding these elements, like part-whole relationships; possessive relationships; and agent-action-receiver relationships.

When we begin to anticipate the implications of representation and symbolization abilities to children with severe language deficits, such as those of children with autism, we find that we have two basic and yet profound questions. First, we need to know whether or not a child has representations of past experience that are available to guide his or her subsequent behavior. Further, we need to know whether this knowledge is adequate to support the meanings that are basic to human language--in other words, do children have adequate representations of the relationships

Table 5
Early Semantic Categories

Category	Examples
<u>Perceptual Properties</u>	
1) Action of Functional Use Attributes (Dynamic)	([car] <u>go</u> ; <u>bounce</u> [ball]; [knife] <u>cut</u>)
2) Auditory Attribute (Dynamic)	(bow-wow; tick-tock)
3) Tactile Attribute (Static)	(soft; hot)
4) Size Attribute (Static)	(big; little)
5) Form Attribute (Static)	(round; pointy)
6) Color Attribute (Static)	(primary colors)
<u>Relational Properties</u>	
7) Possession/Association	(<u>mommy</u> [lipstick]; <u>baby</u> [diaper])
8) Part/Whole	(<u>car</u> [wheel]; <u>dolly</u> [leg])
9) Location (Entity)	([baby] <u>chair</u> ; <u>there</u> [ball])
10) Location (Action)	([bye-bye] <u>car</u> ; [sit] <u>there</u>)
11) Idiosyncratic experiential relationship	([horse]-- <u>grandma</u>)
<u>Relationships in Time and Space</u>	
12) Existence/Notice	(doggie!; " <u>hi</u> [baby]")
13) Non-Existence/Disappear	(all gone; <u>no</u> [juice])
14) Recurrence	(<u>more</u> [cookie])
<u>Elements in a Perceived Event</u>	
15) Agent/Instrument on Action	(<u>mommy</u> [do it])
16) Object/Receiver of Action	([throw] <u>ball</u> ; [kiss] <u>me</u>)
17) Action/Process	(<u>throw</u> [ball]; <u>kiss</u> [me])
18) State	(hungry; sleepy)
19) Entity/Experiencer	([good] <u>cookie</u> ; <u>baby</u> [happy]; <u>I</u> [want])

Source: McLean, Snyder-McLean, Sack and Decker, 1982.

that languages map concerning the events and entities in the environment? Do they, for example, understand the relationships that are reflected in language forms that refer to elements in terms of their parts (e.g., wheel for car); their attributes (tick-tock for clock); or their possessive attributes (mommy's for lipstick)? Can they separate the actor, the action and the receiver in a dynamic event so that they can externalize it (boy hit ball)?

If such knowledge is available for symbolization, then we must know whether a child has the basic ability for symbolizing this knowledge in some way so that it can be used to refer to certain referents. Thus, we will need to know whether a child can make some knowledge observable through use of a picture or an enactive gesture (stirring to refer to a spoon); or whether he or she can use a totally arbitrary symbol to refer to an entity of an event (dog to refer to the appropriate animal).

Assessment of Representation and Symbolization Abilities

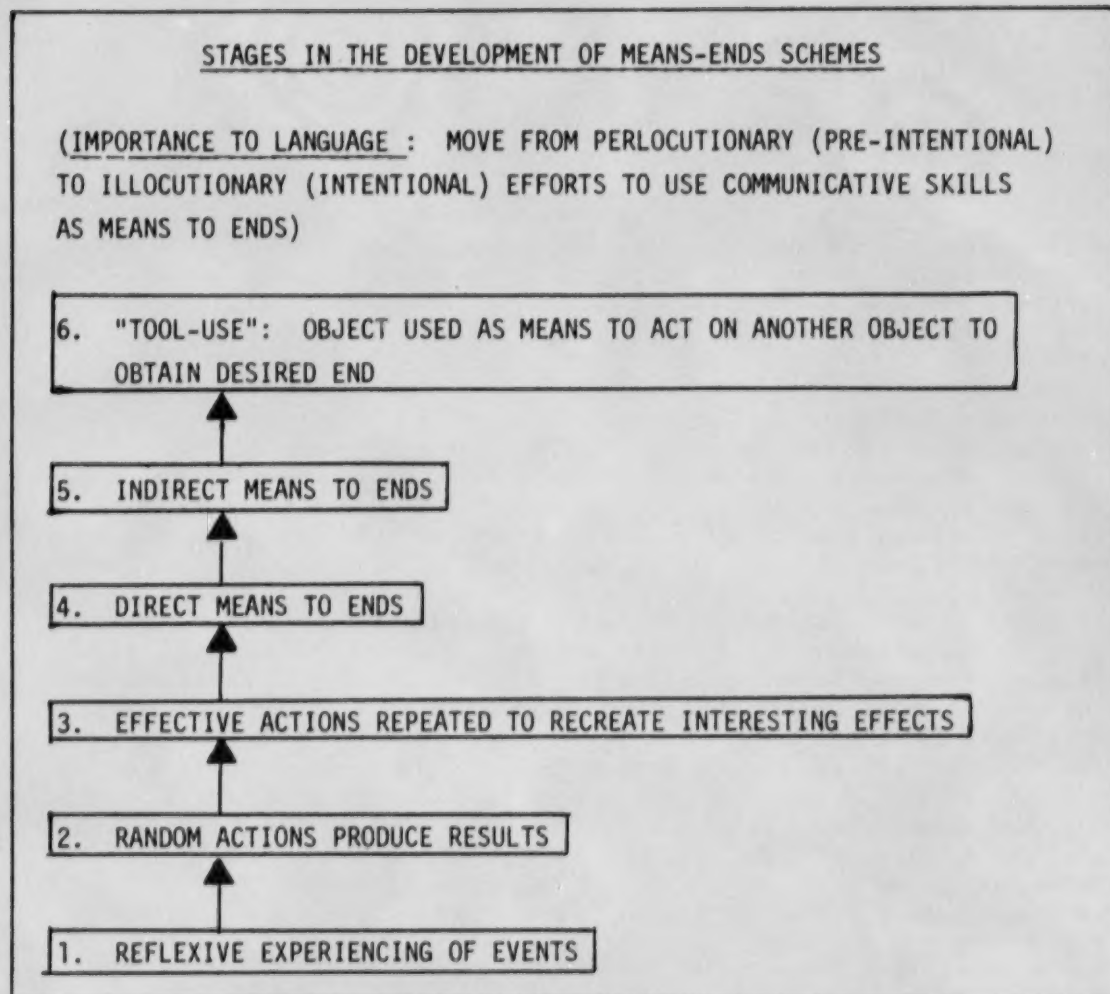
In making these judgments about a child's apparent cognitive skill adequacy for communication and language, we have adopted assessment procedures based on Piaget's model of sensori-motor development to infer the level of representational and symbolic ability a child has available in his or her current behaviors.

Representational Ability

The ability to use past experience and knowledge to guide subsequent behavior needs to be tested across several different types of context and relationship. Basically, in this assessment, we want to see how children use their knowledge to plan and carry-out certain actions on the environment. Of the six dimensions of sensori-motor development assessed in Uzgiris and Hunt's (1975) Piagetian-based assessment scales, we have found two to be particularly useful in this regard. First, a child's basic means-ends strategies for attaining desired entities or events can be extremely revealing as to the extent that a child's past discoveries are guiding his or her current behaviors.

Table 6 shows the orderly emergence of various levels of means-to-ends schemas. The reader can see that children begin by simply reacting to events that are interesting to them. Such interesting events are more than likely action events, in which things move or make noises. Children might show some increase in the level of their activity upon perceiving these events and, thus, might kick and move their arms at a higher-than-normal rate. Later, slightly older children will be carrying out more direct actions in trying to touch objects, push them, and generally interacting with them in relatively gross ways. When these behaviors are followed by some change in the action of the object, children will repeat the actions that accompanied the interesting result. Thus, a ball that is poked and rolls, will evoke more poking behavior from a child. Still later, at about nine months, children will have knowledge that will guide them to act directly on things to create desired ends. Thus, they will move obstacles that interfere with their direct grasp of objects, and will reach into buckets to retrieve blocks and rattles. At even higher levels of means-ends, children will begin to use indirect means to desired

Table 6



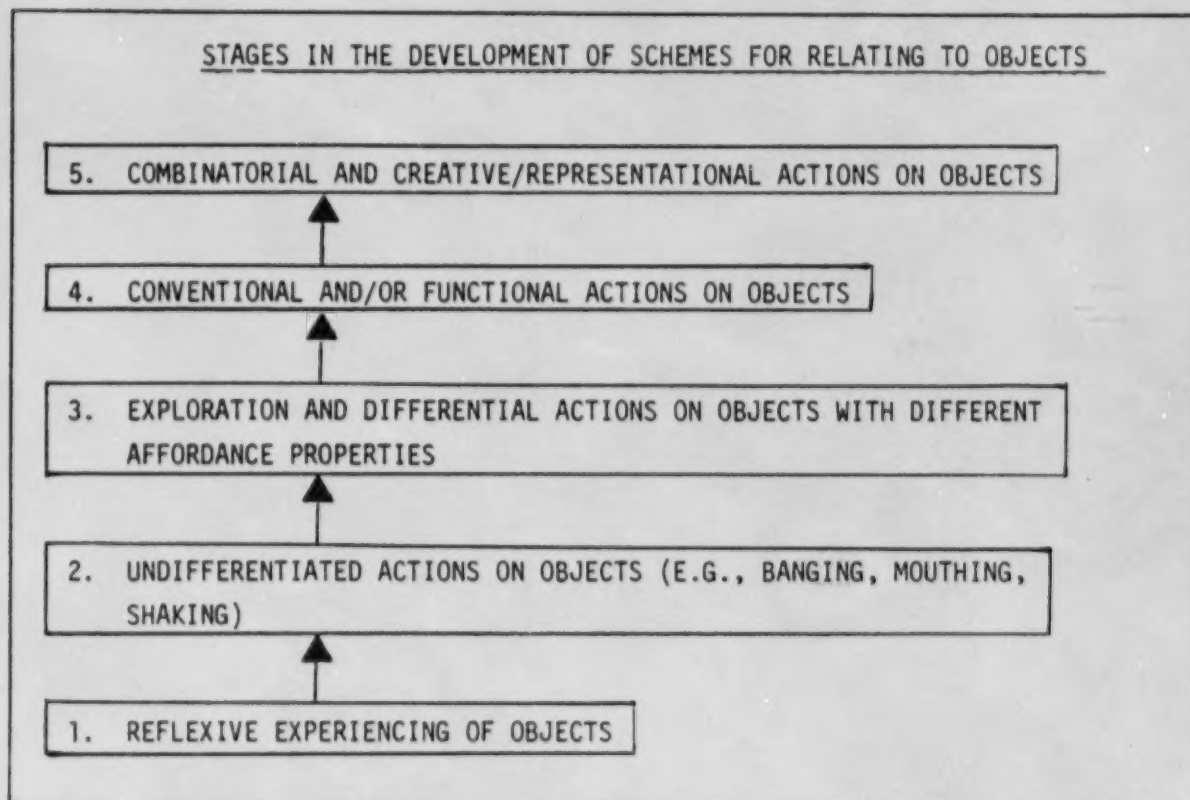
Source: McLean, Snyder-McLean, Sack and Decker, 1982.

ends--they will pull strings to make toys move and will put objects into jars and then shake them to create interesting auditory events. In the final stages of means-ends, children will have learned to use other objects as tools to attain desired events. Sticks will be used to "rake-in" blocks. Blocks will be stacked on trays and transported to a desired play-site. Hammers will be used and other "tools" will be used to pry things open. At this point, children have problem-solving strategies available to guide their attainment of certain desired states and events. Clearly, then, such children have a full representation of the relationships which must guide such problem-solving.

The second sensori-motor domain of interest here is that involving children's basic schemes for relating to objects and entities in their environment. These schemas reflect an increasing representation of various relationships that obtain among and between entities, events, and other people in the child's environment. Table 7 shows the general course of emergence of children's schemes for relating to the entities in their world. Again, the reader will see that the initial schemes are gross and reflect the reflexive experiencing of various objects through visual, auditory and olfactory pathways. In the stages beyond about two months, we most often see infants simply grasp objects, shake them, and put them into their mouths to further experience them. Soon, however, we see the representational knowledge that children gain through this primitive experiencing begin to direct more purposeful and productive actions on objects. Children begin to explore objects in many ways. They test-out an object's noise-making potential, its throwability and rollability, its potential to stand on end or go into some other toy. All of these things lead children to the stage where they manipulate objects differentially in terms of the things that each object does "best." If it makes noise--they shake it or bang it. If it rolls, they roll it. If it combines with another object to create some interesting new effect--they combine it. Finally, in the latter stages of schemes for relating to objects, we begin to see various objects used to carry out specific functions. Thus, various instruments are used functionally; that is, knives are used to cut with; hammers to pound with; and books are clearly to be looked at or "read" with appropriate turning of pages. Soon after such functional-use schemas emerge, children's behavior will reflect an even higher level use of entities. These schemes can be called conventional-use schemes and they differ from the functional-use schemes in the fact that they reflect uses of entities and objects in ways determined to be socially-appropriate by other people in the environment, rather than some intrinsic, instrumental use. For example, a knife cuts because it is made to cut and thus cutting is a functional-use. But necklaces have no such clear function, except that children have observed them worn around people's necks. Similarly, lipstick is put onto lips; dolls are cuddled; and toy cars are meant to "drive." Thus, children's schemes for relating to objects reflect all of their experience with those objects, including experience with their physical, action-affordance properties and their social, conventional-use properties. Finally, children reach a stage where they can create their own chained-event scenarios in relating to objects--they begin to put together farm scenes by putting up little fences around their toy barns; arrange animals and tractors in appropriate locations and even to "play farm" by recreating the kinds of events that occur in such a context. At this point, then, children

are clearly in possession of a full body of knowledge about the properties and relationships of a wide array of entities, and they are able to use this knowledge to combine entities in creative and productive ways.

Table 7



Source: McLean, Snyder-McLean, Sack and Decker, 1982.

Indicators of Means-ends and Schemes for Relating to
Objects; Representation Ability

Returning to communication and language, we can see that children who manifest appropriate schemes for relating to objects and means-ends are reflecting a high level of representational knowledge about their world. They show us that they have "learned" from all of their experience and that this knowledge is available for them to guide relatively complex repertoires of their behaviors. Children at this level can play creatively; act out functional roles in using or exploiting objects in the world; and, further, reflect the general order and nature of human social conventions in interacting with objects in both functional and appropriate ways.

Children who can do all of these things show us, then, that their knowledge of the world is both well-established and, further, is appropriate to the ways in which we refer to the world in language. Such schemas as we have described above reflect a knowledge base that includes

all of the basic relationships which obtain in their world. Children demonstrate that they know about agents, actions and receivers of actions; attributes of entities; location of actions and entities; and other of the relationships that form the bases of our semantic system for talking about the world in language forms (see Table 5 for a review of semantic notions and categories).

There are clear indications in today's research that attempts to teach children to talk about things that they do not know about are singularly unsuccessful. Children use knowledge to create language far more than they use language to create knowledge--a fact that often escapes the adult who is used to acquiring new knowledge through reading and talking to others. Consequently, severely handicapped children who do not demonstrate the ability to guide their behaviors according to knowledge they have gained pose serious problems to language interveners. We shall discuss the clinical implications of this observation in later sections of this chapter.

Symbolization Ability

If a child's level of means-ends schemas and schemes for relating to objects indicate that there is an adequate knowledge base for language, we must consider the second major dimension of cognitive abilities: symbolization ability. In the area of symbolization ability we must consider whether our severely handicapped clients have the ability to translate their knowledge into some perceivable form. Again, there is a discernible sequence of levels at which such abilities can exist and it will be important for us to know at which level various of our clients are operating.

Table 8 shows the various levels of symbolization at which a referent can be represented. The first is that in which a part of an entity or event is adequate to represent the entity. Thus, a doll's leg is enough to signify an entire doll, and part of an action sequence is adequate to represent the entire sequence (e.g., a stirring motion can represent the use of a spoon to mix some substance). This part-whole representation is called an Index representational level.

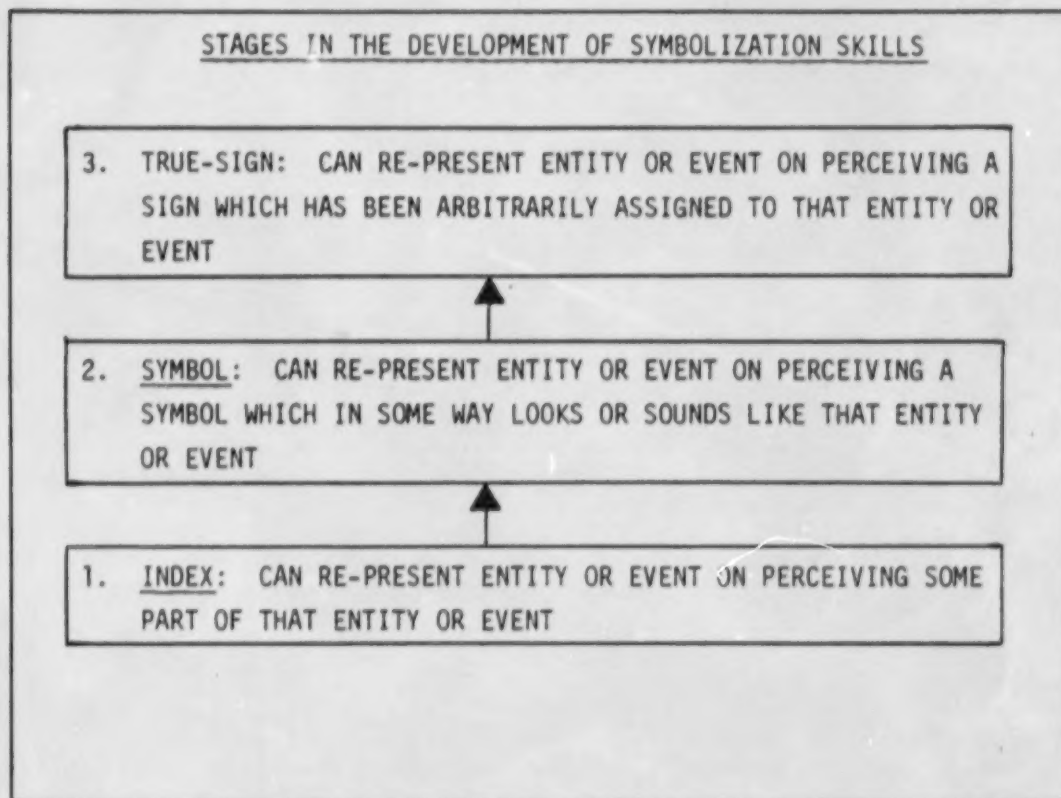
Another level of symbolic representation involves the presentation of some symbol of an object or action that looks or sounds in some way(s) like the object or action. Thus, a picture can represent an object or event. Similarly, a shape drawn in the air can represent a referent entity, or a toy car can represent a real car. This is often called the Icon level because of the matched features between referent and symbol.

The third level of representation, as shown in Table 8, is the true sign level and this level allows a symbol which does not present either a part of the referent or features of the referent to represent that referent. True signs, then, are spoken or written words or manual signs which are neither iconic or enactive in relationship to the referent.

Such symbolic relationships can exist in both a receptive mode and an expressive mode. Frequently, severely handicapped children show differences in their receptive and expressive symbolic ability. Thus, when planning either an expressive mode or a receptive mode for communication

and language, it is critical that the teacher or clinician have evidence of a child's symbolic ability level. It would do little good to try to teach manual sign language to a child who shows no true sign representational ability. Similarly, it would not make sense to utilize a rebus mode for a child who is capable of functioning in a true sign system, such as standard graphemes.

Table 8



Source: McLean, Snyder-McLean, Sack and Decker, 1982.

Symbolic ability levels are difficult to assess except through carefully structured assessment tasks and diagnostic teaching processes. There are, however, some non-language related behaviors which can give a professional a cue as to a child's symbolic functioning. For example, a child who is consistently able to imitate is demonstrating the ability to translate experience into an observable form. This might not be extremely high level, but it does indicate at least the beginning elements of symbolic behavior. Similarly, children whose play includes having dolls "eat" and "drink" from toy bottles demonstrate the ability to translate certain of their knowledge bases into observable behaviors which are both indexical and iconic symbolizations of real world entities and events. A doll, for example, is an iconic symbol, retaining many features of a real infant. Thus, when a child treats a doll as if it were a real baby, he or she shows us that a symbol which presents the features of another entity can represent that entity. Similarly, a child feeding a doll is demonstrating that the action properties of a real life event can be used to represent that event.

Usually, children who are capable of such types of "symbolic play" as are given in the example above are capable of true symbolization of referents in the real world and, thus, can be considered potential candidates for communication systems using pictures, gestures, and often, true signs in various language modes. There are, however, many severely handicapped children who do not demonstrate such symbolic ability and it is important for us to reflect this fact in our treatment planning and implementation.

Deficits in symbolic ability have important and direct implications for language forms and language modes. Unfortunately, it is often the case that children receive formal language training before they demonstrate this most basic symbolization ability. While we must be careful not to underestimate child abilities, it is also a significant error to overestimate them. We shall discuss this in a broader framework in the concluding sections of this chapter.

Language Modes

At this point, it should be clear that consideration of both the socialization factors involved in communication, and the cognitive abilities critically related to language, lead us to consider another issue which is prominent in both philosophical and empirical perspectives on language--that of the mode or signal level which can carry communicative intent and function. For many years, speech was the single mode considered for language even among severely handicapped children. Obviously, in recent years, this has changed and we have more and more awareness that communicative effectiveness is a primary goal for severely handicapped clients, and that there are alternatives to speech in the attainment of such effectiveness. Thus, we have seen wholesale moves to manual sign systems, Bliss-symbolics and picture communication boards. All of these moves have provided important help to severely speech deficient and other severely handicapped children.

The data on early communicative forms of very young children offer powerful empirical evidence that effective communication systems are first developed at the levels of conventionalized gestures and intonated vocalizations, rather than actual linguistic forms. Children at early levels of development demonstrate their understanding of the basic rules for social interaction by filling their turn, maintaining a joint focus on their receiver, and maintaining a topic in their interaction, either by responding to the context of the interaction or the behavior of the other person in the dyad. When we observe a child operating at this level of intentional communication with gestures, intonated vocalizations, and appropriate dyadic patterns, it is clear that such a child is an effective communicator and is a basically social human being. Such a child is readily accepted and productive in normal social environments, with only minimal accommodations on the part of more mature speakers. Such observations are encouraging for those who work with severely handicapped children, for they suggest that true language forms in the standard mode of speech are not absolutely necessary to create a well-functioning communicator.

In addition to providing important data and theory revisions regarding communication and language per se, recent research provides the educator and clinician with important perspectives on the process and procedures involved in learning these critical adaptive skills. Although it was at one time suggested that there was no way to explain language as a learned behavior (Ervin-Tripp, 1971) today's data reveal that there are some predictable and effective strategies in use by both adult caregivers and children as they seek to respectively teach and acquire communication and language (Snyder & McLean, 1977; Snyder-McLean & McLean, 1978).

Adult Facilitation Strategies

Logically, it seems indisputable that a child must learn language from mature language users in his or her native culture. The notion of an innate blossoming of language as a result of pre-wired brain structures once suggested by Chomsky's (1957) views seems to have been totally discarded. Instead, research which describes mother-child interactions specific to teaching and learning communication and language has fostered a view of some rather basic and effective strategies being carried out by both adults and very young children toward the joint purpose of establishing a communication and ultimately language system which functions between them and, then, with other members of the overall culture to which they belong.

Snyder and McLean (1977) have characterized these respective strategies as facilitation strategies for adults and acquisition strategies on the part of the child. Before we consider the specifics of these various strategies, let us become aware of the context in which these teaching-learning activities occur. First, adult caregivers and children interact in social commerce throughout their day. There are caregiving routines of bathing, dressing, toileting and eating in which predictable rituals develop. In addition, there are clear play routines in which the joint action and joint attention of both adult and child are committed to some enjoyable social commerce (Bruner, 1975). In this joint commerce, all of the rules of human interaction are observed, and both adult and child stand ready to respond to one another and also to play their respective role in initiating and evoking responses from one another. These interactive rituals are usually carried out in a context of familiar surroundings, with familiar objects, and with familiar goals. Basically, both members of the dyad are committed to negotiating a successful and productive interaction. (Interestingly, these same conditions obtain for most adult-adult interaction also!)

Within these contexts and activities, adults contribute some very specific types of facilitation behavior to aid children in acquiring the motivation and intent to communicate, as well as the means to communicate. Table 9 shows these behaviors. As the reader can see, these facilitation strategies relate directly to three dimensions of the overall communicative process: (1) responding to the intent of communicative behaviors; (2) modeling linguistic and para-linguistic elements (e.g., intonation, rhythm, and intensity) which communicate meaning; and (3) modeling the overall elements of human dyadic interaction patterns.

Table 9

Adult Facilitation Strategies

* Respond to apparent intent of child's signals	
* "Scaffold" for child in his interactions with the environment	
* Talk about things that are meaningful to the child and mark the segments of dynamic events	
* Use modified, child-sized language ("Mother-ese")	
- shorter length of utterances	}
- simplified grammar	
- more complex grammar	
- simplified lexicon	
	LINGUISTIC CHARACTERISTICS
- frequent repetition and paraphrasing	}
- slower phrasing	
- clearer enunciation	
- exaggerated intonation + stress	
	PARA-LINGUISTIC CHARACTERISTICS
* Expand and emend child's actions and utterances	

Source: McLean, Snyder-McLean, Sack and Decker, 1982.

The child's strategies for responding in these interactions are just as predictably observed and seem highly functional in enabling the child to learn to play his or her part in an interaction and to learn the conventions of human communication. Table 10 lists these "acquisition strategies" as evidenced in child behaviors.

Clearly, children are working diligently to: (1) maintain interaction within the joint focus of the dyad; (2) respond appropriately to communicative behaviors of adults; and (3) acquire specifically modeled language behaviors emitted by adults.

There are two major implications of these data for communication therapy with children with autism or any other severely handicapping condition. The first implication is that professional treatment contexts rarely reflect the elements seen in natural language teaching situations. While, such natural learning conditions are clearly not sufficient for severely handicapped children, it does seem that they contain elements that would be important to more effective clinical/educational programs.

For example, it would seem that clinical programs should attempt to provide some truly social commerce as a context for language teaching. This commerce should require and structure certain interactive behaviors toward some real product or goal of the interaction. As they are now structured, our clinical dyads often seek only language structures as products and thus ignore the other possible products of dyadic interaction--products like entertainment, completed projects of various kinds, and successfully completed play routines. In addition, clinical dyads rarely give children opportunities to initiate communicative responses which could be responded to by teachers and clinicians. Certainly, clinical dyadic interactions need to be structured more intensively and richly than interactions in natural language learning contexts. However, it would seem that we can incorporate some of the more important dimensions of language acquisition and facilitation that occur in interactions between normally developing children and their caregivers. We must seek far more important interactive and communicative behaviors than we have in the past. Further, we would argue that language teaching for severely handicapped children must take place in more interactive, social contexts than we have provided in the past. Since such interactions occur in all manner of events in the classroom and at school, as well as at home, this observation suggests that language and communication training must be targeted within the contexts of everyday routines and interactions rather than being limited to some small segment of the day labeled "language time."

Table 10

Child Acquisition Strategies

- * Try to act upon and have some effect on environment
- * Attend to entities and events involved in interactions
- * Attend to joint referents - indicated by other
 - referent in dynamic state
 - gesturally indicated referent
 - visually indicated referent
- * Try to respond appropriately to initiations by others
- * Listen selectively to child-directed utterances
- * Imitate selectively those utterances, or parts of utterances, which are just being learned
- * Ask questions
- * Talk about things

Source: McLean, Snyder-McLean, Sack and Decker, 1982.

A second implication of this discussion involves an awareness that the severely handicapped child rarely demonstrates the acquisition strategies exhibited by normally developing children. Obviously, this is one reason that teachers and clinicians do not behave in "normal ways" toward such children. It is important, then, to include some of these critical child acquisition strategies as targets for severely handicapped children. While we do away with our old "eye-contact" programs, we should begin to program the maintenance of mutual attending and joint-focus in interactions. Clearly, too, severely handicapped children must be trained to respond to the new communicative behaviors of their interacting adult partners and to attempt new behaviors modeled for them.

It would seem productive to set up observations of interactions between the child with autism and his or her primary caregiver(s). Such observations should be structured to allow identification of deficits in the child's acquisition strategies, as well as any deficits in the adult's facilitation strategies. Identification of such deficits will usually give us clear indications of targetable behaviors for both adults and children to be incorporated in our treatment plan. These behaviors, if achieved in the repertoires of both, can significantly alter the patterns of interaction between them for both higher levels of normalization and increased instructional productivity.

OVERALL IMPLICATIONS OF REVISED LANGUAGE MODELS FOR CHILDREN WITH AUTISM

Probably the most critical awareness that comes from analysis of all the many elements involved in the evolution of communication and language in the normally developing human organism is that which focuses on the severe deficiencies which exist among severely handicapped children. The deficiencies of children with autism, for example, can be seen to be not just in language per se, but in all of the social and cognitive elements that are generic to normal communicative interaction. Children with autism are not socially proactive or interactive. Nor are they active on the physical elements of the world in consistent and appropriate ways. Autistic children often do not evolve appropriate schemes for objects; rather, they tend to establish rather bizarre rituals of self-stimulatory manipulations of selected objects. Autistic children tend not to develop pervasive patterns of problem-solving, means-ends skills; rather, they often wander around aimlessly seemingly without motivation to master the basic skills that normally developing children work diligently to acquire almost from birth.

Perhaps ironically, our greatly increased knowledge base in the area of normal child language serves to facilitate the pinpointing of specific deficiencies in the basic behavioral repertoires of children with autism. Although the symptomatology of autism has been well-known for many years, it is only recently that we have begun to identify the specific nature of the deficits manifest in this symptomatology. Always before, we have tended to concentrate on the interference and unacceptable nature of the behaviors demonstrated by such children, and not on the implications of these behaviors as deficits in repertoires that are basic and constant to the normally developing infant and young child. The implications of this deficit perspective might be that, rather than continuing our

concentration of eliminating undesirable behaviors through aversive consequences, we might be able to take a more positive educational posture and model and condition the alternative, positive generic behaviors that children with autism lack.

Given our relatively poor track record in programs for children with autism, it would certainly seem to be worth a try. Even small gains in these specific interactive behaviors and repertoires could make most autistic children much more attractive and effective as social beings. If processing deficits are a major contributor to an autistic child's deficient social and communicative repertoires, what better treatment could we mount than assuring the careful and systematic targeting of specific behaviors that have been observed to emerge and function in the development of information exchange with both the social agents and the physical elements of a child's environment? To that end, we will review the specific behavioral domains in the social, cognitive, and communicative areas. Such review and re-syntheses would seem to have good potential to direct assessment of such children and, then, to identify specific treatment goals for them in these critical areas of behavior.

Social Bases of Communication and Language

In the social domain, we have identified three specific areas of concern (McLean et al., 1982). First, is the relative level of development of intentional communication behaviors. A review of Table 1 will give the reader the levels at which these are observable and will identify the emergence of varying types of communicative signal repertoires associated with each level. The second dimension of this area that will interest professionals concerned with autism is that of the functions which any intentional communicative acts are intended to accomplish. We must be sensitive to the fact that human communicative behaviors should carry out a wide range of functions, including imperative requests, declarative references, answers, requests for information and some others. Children whose communicative repertoires do not function to attain such communicative effects are showing important deficits in their communicative behavior. (Tables 2 and 3 listed these intentional communicative functions.)

Finally, in the social domain, children's deficits in dyadic interaction skills should be identified. Table 4 listed the basic elements of human interaction behaviors. Assessment in this domain should provide a teacher or clinician with some specific behaviors to train in order to improve an autistic child's socially interactive repertoire.

Program concentration on these social dimensions of communication and language could make important differences in the overall effectiveness of a severely handicapped child's social acceptance and functioning. There seems little doubt that the behavioral elements identified in the above-listed taxonomies comprise deficit areas for children with autism. If the process deficits that are now posited to explain these behavioral deficits could be overcome by intensive treatment programs, the benefits accruing to the child would be significant.

Cognitive Bases for Language and Communication

Clearly, the generic cognitive development domains identified in Table 5 have implications far beyond communication and language. They are, however, also crucial to language and, interestingly, their presence can be demonstrated in language and communication quite readily. For example, Bates et al. (1975) report data that suggest that the move to intentional communication, in which a child demonstrates the intent to have an effect on another person's behavior, emerges in tandem with a child's development of indirect means-ends schemes in the sensori-motor domain. This parallelism is logically appealing because of the basic description of language as a social tool. Thus, as children learn to use tools as indirect means to desired ends with objects, empirical evidence suggests that they also learn to use other people as means to a desired end.

The other cognitive domain important to deficits specific to language and communication is that of schemes for relating to objects (see Table 7). We have suggested that the knowledge demonstrated in schemes for relating to objects reflects the knowledge bases which are necessary to undergird language meaning (McLean & Snyder-McLean, 1978). Thus, a child's demonstration of his or her knowledge about the relative function of objects and the relationships that they have with other objects has important implications for the semantic notions and relationships that children are able to learn to "map" in language forms.

In addition to the two major sensori-motor scheme domains, the cognitive area also gives us important data regarding a child's basic abilities to use symbolic representations to refer to the world of things, actions, and relationships. Table 8 summarized three major levels of symbolization, including the true-sign level required for true language. A child's behavior can also be analyzed to identify deficits in this critical area. Such deficits have important implications for both expressive and receptive performances in various communicative modes.

SUMMARY

Our recently expanded knowledge about the many elements of human learning and performance that are subsumed in communication and language behavior seems to provide many powerful and specific bases for deficit identification and programming to meet the needs of children with autism. As such, these behaviors identified from normal first-language learning children bring perspectives to the remedial process which are much richer than those previously available from strictly behavioral perspectives. Not only do these data allow for relatively precise assessment and targeting for autistic children, but they do so in behavioral domains that appear to offer both powerful effects for such children and logical treatment targets for educators and speech-language specialists.

In addition, the specifics of these needed behaviors and abilities suggest important modifications in the overall treatment milieu and procedures for such children. Specifically, these perspectives suggest that we must concentrate on treatment contexts that make more demands and provide better models of patterns and behaviors of human social interaction in the commerce of everyday living. While, certainly, naturally

occurring procedures must be made more pervasive and systematic, the procedures observed in normal teaching-learning processes directed toward communication and language would seem to offer many specific directions for treatment and programs aimed at the problem behaviors and deficits manifest in children with autism.

REFERENCES

- Bates, E. The emergence of symbols: Cognition and communication in infancy. New York: Academic Press, 1979.
- Bates, E., Camaioni, L., & Volterra, V. The acquisition of performatives prior to speech. Merrill-Palmer Quarterly, 1975, 21, 205-226.
- Bloom, L. Language development: Form and function in emerging grammars. Cambridge: M.I.T. Press, 1970.
- Bowerman, M. Structural relationships in Children's utterances: Syntactic or semantic? In T. E. Moore (Ed.), Cognitive development and the acquisition of language. New York: Academic Press, 1973.
- Bruner, J. S. The ontogenesis of speech acts. Journal of Child Language, 1975, 2, 1-19.
- Chomsky, N. Syntactic structures. The Hague: Mouton, 1957.
- DeLaguna, G. A. Speech: Its function and development. Bloomington, Indiana: University Press, 1963.
- Ervin-Tripp, S. An overview of theories of grammatical development. In D. Slobin (Ed.), The ontogenesis of grammar: A theoretical symposium. New York: Academic Press, 1971.
- Guess, D., Sailor, W., & Baer, D. Children with limited language. In R. Schiefelbusch (Ed.), Language intervention strategies. Baltimore: University Park Press, 1978.
- Lovaas, O. I., & Koegel, F. L. Behavior therapy with autistic children. 72nd Yearbook of the National Society for the Study of Education. Chicago: University of Chicago Press, 1973.
- Mahoney, G. An ethological approach to delayed language acquisition. American Journal of Mental Deficiency, 1975, 80, 139-148.
- McLean, J. E., & Snyder-McLean, L. K. Early language acquisition and intervention: A transactional approach. Columbus, Ohio: Charles Merrill, in press.
- McLean, J. E., Snyder-McLean, L. K., Sack, S., & Decker, D. A transactional approach to early language training: A mediated program for inservice professionals. Columbus: Charles Merrill, 1982.
- Piaget, J. The origins of intelligence in children. New York: Norton, 1952.
- Piaget, J. The construction of reality in the child. New York: Basic Books, 1954.

- Robinson, N. M., & Robinson, H. B. The mentally retarded child: A psychological approach. 2nd Ed.; New York: McGraw-Hill, 1976.
- Rutter, M., & Bartak, L. Causes of infantile autism: Some considerations from recent research. Journal of Autism and Childhood Schizophrenia, 1971, 1, 20-32.
- Slobin, D. I. Cognitive prerequisites for the development of grammar. In D. I. Slobin & C. Ferguson (Eds.), Studies of child language development. New York: Holt, Rinehart & Winston, 1973.
- Snyder, L. K., & McLean, J. E. Deficient acquisition strategies: A proposed conceptual framework for analyzing severe language deficiency, Journal of Speech and Hearing Disorders, 1977, 81, 338-349.
- Snyder-McLean, L., & McLean, J. Verbal information gathering strategies: The child's use of language to acquire language. Journal of Speech and Hearing Disorders, 1978, 43, 306-325.
- Uzgiris, J. C., & Hunt, J. M. Assessment in infancy. Urbana, Illinois: University of Illinois Press, 1975.
- Wolf, D., & Gardner, H. On the structure of early symbolization. In R. Schiefelbusch and D. Bricker (Eds.), Early language: Acquisition and intervention. Baltimore: University Park Press, 1981.

Working with Parents of Students with Autism

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WORKING WITH PARENTS OF STUDENTS WITH AUTISM

Nicole Raaz

The task of working with parents is one that challenges special educators each day. With the provision in state and federal law for parent participation in special education came the requirement for a working relationship between parent and educator. If the relationship established is positive, then the process of working together is productive and will benefit the child which is the intent of the law, but more importantly the goal of parent and professional.

Unfortunately, some relationships have not always been positive. For many educators the mention of "parent involvement" has an effect similar to waving a red flag. There is a degree of apprehension associated with the words. Parent involvement is not really something to be feared, but it is certainly something to approach with caution.

The establishment of a positive working relationship is often hindered by some generalized perceptions, or better stated "misperceptions," that parents and educators have of each other. Educators tend to see parents as one of three types.

Some parents are uninvolved. Since they don't come to meetings they must not care, so why try to involve them?

Other parents are seen as overly involved. They question what is being done, demand more, and give a lot of advice about education when the fact is that they are "only parents." (Having them involved tends to complicate things for both classroom teacher and administrator.)

There are a few of the third type of parent, the "good parents." They come to all meetings, approve of the program and generally don't make waves.

Parents have some similar perceptions of the professionals who are involved with their child's education. They seem to see the educators also in terms of three types. First, as the "miracle worker," usually a teacher, who can do no wrong and will certainly "save" the child. (It should be noted here that this view is most often held by parents of young children. As the children grow older, parents are dealing with a different reality that will be discussed later.)

At the other extreme is the professional who knows nothing about the child or the disability and, what's more, doesn't care. Administrators are often seen as this type. Somewhere between the two extremes is the educator who "means well" but really doesn't know about the child.

Such generalizations are, of course, inaccurate and unfair. It is interesting that this happens so frequently with people who are focusing

on individuals and individual needs. But, unfortunately, it does happen and there may be a relatively simple explanation for it.

The difficulties in working together arise because parents and educators are people, and who they are, and how they relate is shaped by the totality of their life experiences. Both personal experiences and previous parent/professional interactions will have a great deal to do with the ability each will have to work with the other.

This may sound simplistic, yet, it is this very enormous variable, the individuality of people, that shapes the "working together" relationship making it a very rewarding experience when it is positive, and a very frustrating one when it is not.

If this is true, then it would be helpful for educators to know something about the parents of the children they serve in order to get to know them more as people and less as "parents."

Some of the information presented here could apply to parents of children with other disabilities. However, the child with autism offers some unusual challenges and frustrations for families and these will be addressed. What is shared here is not one person's view, but rather a composite of information gathered from a number of parents of children with autism over a period of years.

When parents meet through school organizations, at conferences, or in friendships that develop from the similarity of their lives, the conversations usually progress from the school program to personal experiences with the child to, finally, if there is time, the effect of living with the child on themselves and the family. Occasionally professionals are included in these conversations but often they are not. The thoughts shared in these conversations are those that parents have, usually late at night, in a moment of peace when the mind can be allowed to wander from the immediate needs of the child to themselves. These more private thoughts are shared here in the hope that the sharing will lead to a better understanding of what these people are experiencing as parents of a child who has autism. Responsibilities for the parent/professional relationship will be based on this understanding. (The "professionals" addressed here are those in education, but in some instances the suggestions could apply to social workers, psychologists, medical practitioners and others involved in human services.)

THE EARLY YEARS

Perhaps the best way to begin would be to describe what occurs as the family becomes involved in discovering their child is different. Parents have usually suffered a great deal before the child is diagnosed. By the time they reach educators they have endured a stressful period of uncertainty and numerous, often less than positive, encounters with the medical and social service systems.

When a child is born with an obvious physical disability or a condition that can be medically identified, it is, of course, very traumatic for the parents. Yet, the condition is recognized and identified so the

parents can begin the process of acceptance and the interpretation of what this will mean in the context of their lives. Parents of children with autism live for years with uncertainty. They suspect a problem, yet, they and the professionals they turn to, are unsure of what it is or what to do about it.

The disorder seems to develop in two ways. Some parents have reported that the child was different from birth; others observe that the child developed normally, then gradually lost language and regressed around the age of two or two and a half. In each case parents had a sense that something was "not right" long before a diagnosis was made. The stress associated with this period of not knowing is great.

The child with autism is different, but not enough different that the parents can be sure there is a problem. The infant may cry a lot, but then a lot of babies are "colicky." The baby may be unusually quiet--a "good" baby. If the baby screams at bath time or refuses to eat certain foods, he could be "stubborn" or have a "mind of his own" at an early age.

The identification of the problem is further confused by the uneven skill development associated with autism. The parents reason that if there was a problem, if the child was retarded, he wouldn't have walked at 12 months of age, or put a ten-piece puzzle together at 18 months. And, of course, the child looks perfect. All of the parts are there. Often the child is beautiful. Parents want to believe that the child is okay and since children are people, and different people have different personalities, the behaviors that parents notice can often be explained away--for a while.

Family and friends are often called upon for opinions about the child. Friends will reassure the parents that nothing is wrong. If the child isn't talking at age three, a friend will know someone who didn't say a word until age four, then began talking in complete sentences and today is attending Harvard. Friends do not want to be responsible for telling the parents that the child is different, even if they suspect it.

Family members add their reassurance, but may also offer advice. These child-rearing hints switch the focus from child to parents and add to any concern or guilt they may have that they are doing something wrong.

If the parents have raised other children they are less influenced by family and friends. They can compare the child's development and behavior with the siblings'. They are more confident of their parenting skills since they have raised other children who are normal. They may seek professional help earlier than parents of "first-born" children with autism.

Most parents rely on their family doctor to monitor their children's health. Parents assume that if there was a problem, the doctor would surely know. However, few pediatricians and fewer general practitioners will recognize autism. Physically the child seems normal. Some skills may be slow in developing but since others are normal or even above normal, the physician is not overly concerned and does not want to alarm

the parents unnecessarily. When the child appears to be healthy the physician will seldom see the pattern of behaviors which would indicate a problem.

A young mother tells this story of her son's two-year checkup. The child was found to be physically well, but the mother sensed a problem. In an effort to articulate her vague concern she related the following information to the doctor: the child had given up naps at six months of age; he started to walk at 12 months but actually ran most of the day--and night; he had learned to climb out of his crib as soon as he could walk and often got up ten or twelve times a night to wander through the house; it was not unusual for him to be up until 2:00 or 3:00 a.m.; he had no interest in playing with other children and seldom played with toys since he could sit still for only 30 seconds at a time; he screamed continuously during baths; he could hear the faint sound of a dog barking in the distance but usually didn't respond to his name.

The doctor looked puzzled, then asked the mother about her family. When she mentioned that she had only one older sister, the doctor quickly identified the "problem." The mother was simply not used to young children, especially boys. He assured her that her son was a "typical boy," then wrote a prescription for valium--for her.

If the child's development and behavior have been normal and then change, the family is very much aware of the problem and will find it easier to get help. The family doctor who has seen the child prior to the change is more willing to refer the family to a specialist.

The decision to pursue a diagnosis is easier to make if the family doctor acknowledges a problem and makes a referral. The decision is more difficult when the doctor, as well as family members and friends, are offering assurances that everything is okay. That is what the parents want to believe so they feel somewhat irrational for pursuing information that they do not want. Of course, with many of the children the extreme behaviors are making life unbearable and the family must seek help in order to survive.

The parents' stories are remarkably similar, especially parents of older children. Medical tests are conducted by numerous specialists at hospitals and diagnostic centers, but no obvious physical disorder is found. At each step along the way developmental and social histories are taken, and "strange" distant relatives are discussed. Family relationships are examined, siblings and parents are observed, and parents are given tests to determine who "really" has the problem.

Often what is very logical behavior on the part of the parent is seen as irrational by the professional who is looking for a problem and can not find it with the child. If the child's problem is behavioral, the professional, especially those in mental health or social work professions are very quick to judge the parent to be the cause, or at least contributing to the problem of the child. An example of this is the mother who, in preparation for an appointment with the third specialist her daughter was to see, listed medical, developmental and social history information in a notebook in order to have everything together for the process of

filling out forms and for the interviews. Many years later she found in her daughter's school file the following notation made by the clinic social worker: "The mother had all necessary information pre-recorded in a notebook. She appears to be an extremely organized person and may be making unrealistic demands on the child."

A parent may, in fact, be atypical but what professionals so often fail to realize is that what they are seeing is the effect of living with a severely handicapped child. The parent's behavior has been modified to accommodate the child in the family.

DIAGNOSIS

Parents are especially suspect if they are pursuing a diagnosis on their own, without a referral. If there is no obvious problem with the child, the parents are "worriers." If the problem is behavioral, the social history or interview will disclose information to show the parents to be the cause. If the child is more severely involved, the diagnosis will be mental retardation and the parents are considered to be "denying" the problem if they don't accept that diagnosis and seek another opinion.

Parents of children with autism are often accused of "doctor shopping." It is true in the sense that most will not accept a non-answer or one that does not fit the child. They will continue to look until the correct diagnosis is found. Parents do not accept the diagnosis of mental retardation because it does not fully explain their child's problem and there is an intense need to know the whole answer.

Many physicians are reluctant to diagnose a child autistic but there are several reasons why the disorder should be identified as early as possible. Mary Akerley, a past president of the National Society for Autistic Children and mother of a teenage son who has autism, addressed the need for diagnosis in a Parents Speak column of the December, 1975, Journal of Autism and Childhood Schizophrenia:

This suggestion is going to appear contrary to all the latest thinking on labeling but, Dr. Hobbs and Company notwithstanding, I urge you to give the problem a name. One way primitive man dealt with elements in his environment that frightened or frustrated him was to name them. Naming something (or learning it's name) gives some control, even if it is only psychological, over the object named. And the average parent, when he brings his child to you for an evaluation, is both frightened and frustrated; he is functioning on an essentially primitive level and is looking to you to introduce a measure of control into his situation. Telling him what is wrong with his child, as specifically as you can, is the first constructive piece of help you can give him. (Akerley, 1975b, p. 374)

Many parents have described a feeling of relief when they finally received the diagnosis of autism for their child. The disorder that has been described to them fits the child. The uncertainty is over. If someone knows what the problem is, they will surely know what to do about it.

When parents learn that they are not the cause, that autism is an innate disorder of communication and behavior, they feel less inadequate, threatened and damaged as parents. There is an explanation to give to family and friends. Parents can get to know other parents who have similar children. There is comfort in knowing that others are experiencing this difficult situation and surviving it. Parents can begin to learn about the disorder. The energy previously spent in worrying about the vague uncertainty can now be used in a productive way, in getting the specialized help the child so desperately needs.

This need for diagnosis has implications for educators. Staff in programs for pre-school handicapped are often working with undiagnosed children with autism. They may recognize the characteristics, but will not refer a child for specialized services since such a referral might be considered a "diagnosis" by the educator. They are also reluctant to mention autism to the parents. If a medical diagnosis is pursued at their suggestion, and if they are correct, that it is autism and not a condition that can be "cured," they feel in some way responsible for suggesting it in the first place. However, by not sharing information with the parents and by not making the referral they are prolonging the period of uncertainty for the parents and possibly delaying the child receiving the specialized help that he needs. Most parents will welcome the opinion of educators if it will lead to a better understanding of the child and to services that will be more appropriate for his needs.

The diagnosis of autism carries with it another implication for educators. As one family was told when their son was diagnosed, "The disorder is autism. The cause is not known and there is no cure. Medications may help but the only thing that has been known to significantly help these children is a specialized school program." When there is no other treatment available, parents will place a lot of faith and hope in the education system. This is certainly a very big factor in the parent/professional working relationship.

THE GRIEVING PROCESS

A psychologist in Chicago, Dr. Ken Moses, has proposed a "Mourning Theory" which correlates the parents' acceptance of a child's handicap with the grieving process associated with death. His premise is that parents must mourn the loss of the "normal" child they expected to have before they can accept the child who is disabled. He cites five stages that parents must go through--denial, guilt, depression, anger and bargaining--before reaching the final stage of acceptance. This theory is mentioned here because it seems to apply to parents of children with autism and it may be helpful to educators to know which stage a parent may be in during the parent/professional interaction.

One point that Moses makes, which is important for professionals in all fields is that the feelings associated with the various stages are natural. Parents are entitled to these feelings and it is not irrational or "crazy" for them to feel this way. Grieving is a normal and necessary process that they are going through.

Another important point is that there is not much that anyone can do to move a parent from one stage to another. It is a process that individuals must go through for the most part alone.

Most parents of children with autism have been working through the first denial stage, active denial, as they have pursued a diagnosis. They have accepted that there is a problem and are searching for a solution when the diagnosis is made. They do, however, deny the significance or the full implication of the diagnosis. When the child looks perfect it is easy to deny that he is very seriously handicapped and will need care for the rest of his life.

In time most parents will accept the severity of the disorder, at least with the rational part of their mind. But a part of the mind still waits for the "miracle." This may be especially true with parents of children with autism. Since all of the parts are there, it may just be possible that the child will one day wake up normal. The irrational part of the mind clings to that hope.

One very "rational" mother, in talking with a friend, one day admitted that she had broken a mirror shortly before her son was born. Although she accepted his autism, and was very involved as an advocate for services, she also knew that on his seventh birthday he would be normal. He wasn't, of course, but the hope continued until he was well past seven.

As Moses points out, the purpose of the denial is to give parents time to "get it together." Many parents have described the need to put the hurt aside. They can only gradually deal with the emotional aspect of the situation. It is probably fortunate, in a way, that there isn't a lot of time during the day to think about it. If they fully realized the grim outlook for the child and for themselves, they possibly couldn't go on. One mother spoke of the realization over time that, not only "has this happened to us, but that the problem is severe, unrelenting, and will last a lifetime." (Stokes, 1977, p. 289).

Many parents can continue the denial of the severity until the child reaches adolescence. It's difficult to imagine that the beautiful six-year-old boy will ever be like the fifty-year-old man in the institution. The image of the institution is repressed but it is also ever present in the parent's mind.

Years ago when parents of children with autism were openly blamed for the child's condition, more time was spent in the guilt stage than now. Once a diagnosis is made, and they understand that the condition is a brain disorder and not the result of bad parenting, much of the guilt can be dismissed.

Mothers may experience guilt that something they did during pregnancy may have caused the condition. For example, a feeling of responsibility weighed heavily on the mind of a young mother who had been involved with drugs during her pregnancy. She was sure she had caused the autism. It seemed to relieve her somewhat to talk with a mother who had taken no drugs and who had a very similar child.

This particular young woman had also moved into the bargaining stage that Moses describes. She had given up all drugs, including marijuana, and was going to church every Sunday in the hope that this would, in some way, help her son. The bargaining stage is often difficult to see. It is quietly going on in the parent's head and since it is a somewhat irrational process, it is usually not discussed.

Anger and depression are the more obvious stages to an observer. They are both necessary processes on the way to acceptance, but being around the person in either of these stages is not pleasant. Anger and depression are also recurring emotions for parents of children with autism, but parents who are coping well will usually be in control of these emotions rather than being controlled by them.

The anger that parents feel is often difficult to sort out. They simply rage within at the unfairness of it all. Much of the rage cannot be directed at the child who has caused life to be so dramatically changed. It's difficult to be angry with the child who is so isolated and confused by the world around him and is really much more a victim than even the parent.

The anger is usually vented on the society that will not provide the services that would help the child and return the parent's life to normal. Social service agencies that provide for other disabilities, often do not have services for the child with autism. The medical profession cannot cure. The physician can only prescribe medications which may or may not help and encourage the parent to find appropriate schooling for the child. Since the school program is defined as the most effective "treatment," it is not surprising that educators are on the receiving end of much parental anger.

There is a feeling of non-reality that parents often have in the early years with the child, a feeling that "this can't be happening to me." But it is, and with that realization comes depression. The parent feels powerless; there is despair over the inability to change the situation. Exhaustion, too, is a factor in depression; the child demands so much. Added to this is a feeling of isolation; few are living this kind of life so no one really understands what the parent is experiencing.

Even after acceptance the depression and anger remain with the parent but are more controlled. There will be painful experiences from time to time--the neighborhood children going off to Little League practice, birthday parties, graduations, and other minor and major social accomplishments from which the child with autism is excluded. The disappointment, depression, and anger, too, will be there again for a while.

ACCEPTANCE AND COPING

Acceptance and coping should really be viewed as two separate, yet interrelated processes that the parents experience. In acceptance, the parent undergoes a transformation of sorts. It involves the parent's rejection of society's view of the child as "imperfect," and, therefore, undeserving of the love, dignity, and opportunities for self-fulfillment

that are given to those who are "perfect." This transformation is a painful process that is made even more difficult by the current "beautiful people" syndrome--our society's view that only the young, beautiful and successful are worthy. The parent had the same hopes and dreams for this child as all parents have for a newborn. The child should have "the good life," all of the things the parent could not have or could not do. The parent is losing not only the "perfect child," but the opportunity to live out many unfulfilled dreams through the child.

Acceptance comes when the parent learns to value the child who is different. An article by Torisky, a parent from the Greater Pittsburgh Area Chapter of NSAC, discusses this process and offers a rationale provided by psychologist and philosopher Father Adrian Van Kamm:

Van Kamm (1977) speaks of the primary instinctive care drive--how it is activated and enhanced by a sense of similarity between parent and offspring. When the child is dissimilar, i.e., handicapped, malformed or autistic, this care drive is not automatically evoked. However, our human situation differs from the animal situation (where dissimilar offspring are summarily rejected) in that we are human. We can transcend the instinctive and the obvious; we can identify with the spiritual and less apparent similarities in the child. (Torisky, 1976, p. 236)

There is another part also to the acceptance process. It involves learning what life will be like with the child and redefining "normal life" based on this knowledge. The family will not lead a "Hallmark card" existence. The image of mom, dad, two kids and the dog in the station wagon, laughing and smiling as they drive off to the beach, must be discarded. Life with a child with autism will be very different.

What parents come to realize, as they are making the transition to acceptance is that the child with autism is not a tragedy; the tragedy is what society does to that child and to his family. A New York parent, Carol Hanson, has made the following observation:

If people in our society were able to accept the fact that handicapped babies are born, often to people like themselves, and further, if society were able to accept the inevitability of this happening to a certain number of us, then those who have handicapped children would not feel as isolated and overwhelmed with the frustration of not knowing what to do or where to turn for help as we currently do. As individuals, almost everyone believes that it can't or won't happen to them. If we, the parents of handicapped children, want to have an influence on society's future attitudes, we must share our day-to-day lives and our children with our friends, neighbors, and relatives; in short, we must expose our own communities to our children and "condition" them to the fact that we, as families, exist and are a part of our communities. Without this "conditioning," society will continue to ignore us, and families with handicapped members will continue to feel isolated, without an extended family to rely upon. I feel that one of the important roles of organizations such as

the National Society for Autistic Children is that of providing a portion of that extended family which so many parents of autistic people are now doing without. (Hansen, 1976, p. 243)

If parents can adjust their expectations, not only for the child, but for their own lives, if they can define their "normal" and come to believe that it is as valid as the "normal" defined by society, they will have accepted the condition of autism and can move on to coping with it.

Another term for coping might be "emotional survival." It is an on-going process; it is the weathering of day-to-day life with a severely impaired child while maintaining a degree of sanity. A parent may undergo the transition associated with acceptance of the child and the newly defined "normal" lifestyle, yet not be able to cope with the extraordinary circumstances required to accommodate the child in the family.

The demands on the parent, both physically and emotionally, are great. It is not unusual for the child with autism to awaken for the day at 4:00 a.m., or to stay up until 2:00 a.m., or to go to sleep, awaken for a few hours, then go back to sleep. The child will be out of bed and about the house during those times so the parent also is up. Exhaustion is a chronic condition for many parents of children with autism.

Very often the child needs constant supervision when awake. One mother described spending an entire Sunday cooking dishes to use 100 pounds of meat her son had removed from the freezer the previous day. He had been unattended for only ten minutes while the mother was on the telephone and, apparently, slipped into the basement to unload the freezer during that time. Another mother jokingly refers to her "on-going relationships" with the telephone, TV and various other repairmen. These relationships are the result of her son's fascination with mechanical objects. If unsupervised for even a few minutes he is found "working on" the appliances.

If parents could give the child their 24-hour-a-day undivided time and attention, these things, of course, wouldn't happen, but life must go on. There is laundry to do, meals to cook, groceries to buy, the house must be cleaned occasionally and there is a need for sleep. The child must either be supervised or "contained." A containment method used by one family was to install locks on the bathroom and basement doors. Their son had thrown bars of soap, puzzle pieces and toy cars down the toilet until, after frequent repairs, it had to be replaced at a cost of \$360. Tinker toys were found to be jamming the sump pump when the new one was installed (cost \$250). Life with a child with autism can be expensive.

One on-going expense that families have is child care. All parents look forward to the day when they will no longer need a sitter, when the children can remain alone while mother goes to the store and, eventually, to the day the children will become independent. For parents of children with autism, that day never comes; most children will need some supervision for the rest of their lives. It is usually difficult to find someone who is both willing to stay with the child and able to provide the constant supervision necessary. (Going out ceases to be enjoyable if, upon return, the house is in shambles.) As the child grows older it

becomes increasingly more difficult to find child care until finally there is no relief for the family at any cost. The 15-year-old girls in the neighborhood who babysit do not want to stay with the bizarre teenage boy who is twice their size. Grandparents who once could help are older and no longer have the energy for constant supervision. Siblings are a tremendous help in this area but they also grow and need to become independent of extraordinary responsibility for their sibling with autism.

It is the balance of time, energy and relationships that is important, and yet very difficult to manage when the needs of the child with autism are so great. Parents need to be involved with their other children's activities and provide emotional support for them. There is stress for everyone living with this child.

Grandparents are another factor. They also have an important adjustment to make. It is painful for them to lose the "normal" grandchild they expected, and they also hurt for their child whose life has been so dramatically changed by the birth of the grandchild. They worry for their child. As one grandmother said to her daughter, "You go to too many meetings. Why don't you join some nice club so you can get dressed up and go out to lunch?"

There are other family relationships that need to be maintained. Many parents must go separately to weddings or funerals since one is required to stay at home with the child. Large family gatherings for holidays often become an exercise in endurance, rather than the joyous gatherings they are intended to be. If the child can't handle large groups of people he will be miserable, as will his parents. Some relatives may not be comfortable with the child. It sometimes becomes necessary to avoid these events entirely.

The parents, then, must divide themselves among a job, the day-to-day responsibilities of a household, their other children, various other relatives, and this child who requires so much. With the time left over they can concentrate on their personal lives and their marriage.

People who are parents of a child with autism will still have the same interests, goals and dreams they once had, but will be unable to pursue them. A mother will have to forego a career to be with the child. A sport such as tennis, that the couple once enjoyed together, will be abandoned. Family vacations are usually impossible. It is not unusual to learn that couples have not been out together for years or have never been away from the child overnight.

The physical and emotional demands of the child on the parent, the limitations imposed on the family and the uncertainty of the future take their toll. More than half of the marriages to which a handicapped child is born end in divorce. The child may be a direct cause--one parent cannot tolerate the situation and leaves, or an indirect cause--the level of stress accentuates any problems the couple may have and there is simply not enough time or energy to devote to the relationship.

Some parents can maintain the necessary balance and cope surprisingly well. Others cannot. There are many factors which will affect the coping

process, but they are generally related to the fact that parents, and their children who have special needs are individuals. Parents as individuals will differ in their capacity to cope. The children as individuals provide another very important variable.

In the Parents Speak column of the September, 1975, issue of the Journal of Autism and Childhood Schizophrenia, Akerley discusses "The Invulnerable Parent." In the third yearbook of The International Association of Child Psychiatrists and Allied Professions, E. James Anthony, co-editor of the book, presents a description of the invulnerable child, the child of a psychotic parent, whose environment is stressful in the extreme, yet who develops into a psychologically healthy, resilient, competent person with superior coping skills. Akerley has suggested that by substituting "parent" for "child" in Anthony's description, it could apply to parents of children with autism. The modified version of Anthony's description is as follows:

What seemed to characterize the true invulnerables in our sample were the following factors: a seemingly stubborn resistance to the process of being engulfed by the illness; a curiosity in studying the etiology, diagnosis, symptoms, and treatment of the illness reaching to a level of knowledge that is quite surprising; a capacity to develop an objective, realistic, somewhat distant and yet distinctly compassionate approach to the (child's) illness, neither retreating from it nor being intimidated by it, but viewing it as something needing to be fully understood; an exposure to the stressful experience only after immunity has had time to build up; and support, encouragement and candor from an adequately functioning other (child). The invulnerable (parent) not only speaks well for himself, but he speaks well for his family and well also for the sick (child). He understands illness both as a personal experience invading his life and as a phenomenon to be investigated and treated. Of all the (parents) in our sample, these true invulnerables were among the most collaborative and proffered us the greatest amount of information. (Akerley, 1975a, p. 275)

Akerley offers that "Because not all parents display all or even any of these coping skills, it appears reasonable that the concepts of risk and vulnerability, as they are currently understood apply as validly to parents as they do to children." (Akerley, 1975a, p. 276). If the degree of vulnerability of parents will vary, so will their strategies for coping. Each parent will try to manage his life in whatever way he can that will allow him to survive emotionally.

Some parents will learn all that they can about autism and the service system. Their lives are being controlled by the child whose needs are so great and the system that will provide for those needs, so they try to regain a degree of control. They will search out reading material and resources because no one has answers for them. They will become very "professional" in order to impact the system more effectively. Often parents will join organizations such as NSAC to work with others for the benefit of the children. The organizations offer information and also

personal support for the parent. A feeling of kinship develops as parents share the experiences of their common "normal" lives.

Some families will become very involved in the school program. They are willing to carry out home programs consistently and work effectively with the child. Other parents are not good at "hands-on" but will be involved in other ways. Still others will choose not to be involved. The child demands too much. Those parents need to use whatever time is left to divert their attention, if possible, from the child to other activities. They can attain the necessary balance in their lives only through these other involvements. Mothers and fathers may need their bridge club or racketball.

Perhaps coping should be viewed not in terms of "if" but, rather "for how long." Parents will differ in their capacity to endure the demands and stress associated with a lifestyle of coping with autism. The children, too, will differ. There are some children whose needs are greater than a family--any family--can provide for alone. And yet there are few services to offer relief to the family. It is usually an all or none situation, either the family manages alone, or the child will go to an institution. Respite care is a service that, in many instances, could delay the need for out of home placement, but these services are very limited.

Long-time advocate Ruth Sullivan cites the following rationale for provision of respite by the state:

The cure for lack of respite is known, yet there is still a tremendous psychological resistance to the idea that the state has a moral responsibility to help families who need respite services.

If we think of government as an extension of persons and families, providing for us, by our permission, what we cannot do for ourselves as efficaciously (e.g., roads, bridges, schools, parks, postal services, airport terminals), then we should have no problem in expecting government to provide to families in a crisis, no matter how long, what it does routinely for other citizen's convenience and pleasure. (Sullivan, 1979, p. 114)

The decision to place a child out of the home is extremely difficult at best. Parents must come to terms with feelings of inadequacy and failure. It is difficult to accept that someone else can do for the child what they cannot, although they know that in residential placement the responsibility for care is shared by a number of workers who have limited hours with adequate time for rest, days off and vacations. Much of society still views residential placement as "putting the child away," and parents must overcome the guilt associated with this attitude.

If a group home or a facility offering an appropriate program is available, the decision is easier, but there are few such services. Often the only option is a state institution, so many parents endure long past the time when it is reasonable for them to do so.

Out of home placement should not be viewed only in terms of offering relief for the family. It is often better for the child. Some children will function better in a more consistent environment. For the children who when younger had been included to a degree in activities in the neighborhood, adolescence is a very lonely time. There are few leisure activities for the teenager with autism. A group home would offer a peer group and increased social and recreational opportunities.

Adolescence brings changes in both the child and the family. Some children do not make significant changes over the years. Behaviors that can be tolerated in a six-year-old become unbearable when the child is 15. Often behaviors become worse. Parents change, too. It is called burnout, and it is a very real phenomenon. Marian K. DeMyer, in the book, Parents and Children in Autism, discusses what she calls "perpetual parenthood":

From an ethological viewpoint, even the most advanced primates have a limited capacity (in terms of time) to take care of their offspring. On a much longer and more diversified continuum, this is also a human trait. The changing pattern of care, from infancy to late adolescence, brings to the human parent of a normal child a variety of different stresses and compensating satisfactions that are relatively short in duration and destined to change and end. Save for the proverbial "Oedipal mother," there is also a time when an average parent looks forward to letting go of the grown-up child and terminating his basic parental obligations. In the case of the lower- and middle-functioning autistic adolescents and adults, parents who keep them at home are exposed, in addition to other stresses, to perpetual parenthood of a child at a mental level of, say, two to three years of age. No major developmental change is in sight and there is no light at the end of the tunnel. (DeMyer, 1979, p. 227)

DeMyer mentions, too, the mother of two lower-functioning autistic adolescents and three normal children who described perpetual parenthood as "increasingly debilitating monotony." (DeMyer, 1979, p. 227).

Part of what happens at adolescence is that as the child becomes physically bigger, the parent begins to see him as an adult. A new reality sets in. The parent can no longer deny the severity of the problem. The years spent in working with the child and the system have helped, but not as much as hoped for. The parent now realizes that no matter how hard he tries, he will not "cure" the child.

Parents who at one time worked for hours each day with the child, no longer will. Couples who have said the child will always live with them will now readjust those views. They will opt for a "safe" environment, if one can be found, rather than the "perfect" one they hoped to create. Parents who have been very involved in advocacy and organizations may turn their attention to other things, leaving that work for those who still believe in the miracle.

Some people will interpret the change in the parent as "mellowing." Others will believe that the parent no longer cares. But what is

happening is burnout. Sullivan (1979) defines burnout as follows: "the exhaustion of a person's psychological and/or physical resources, usually after long and intense caring. In human terms it means worn out, given up, spent, dissipated, enervated, depleted, drained, consumed, used up, even prostrated." (p. 113)

It is natural for adult children to leave home and that should also be expected for adults with autism who have remained at home. The parents may still be willing to have the "child" live with them, but the child is now a young adult and should be allowed opportunities for vocational and social experiences apart from the family. Services for the adult autistic population are very limited and the need is great.

PROFESSIONAL RESPONSIBILITIES IN THE RELATIONSHIP

The preceding discussion offers an insight into the individuals who are parents of these special children. There are a number of things that professionals can do, based on this information, to make the relationship with the parent a positive one as they work together for the benefit of the child.

1. Develop a Sensitivity for the Whole Child

One of the most important things a professional can do is to begin to see the whole child. The parent who has undergone the transformation associated with acceptance has come to value the child for the person he is, despite his autism. This is important for the professional to do, too. This does not mean the teacher has to love, or even like, every child in the classroom, but can learn to build upon his strengths rather than focus on his weaknesses. The child is totally dehumanized if he is seen only as a collection of bizarre behaviors and test scores. Professionals should try to see the world through the child's eyes to understand that his autism is his way of coping with this world that is so strange to him. When this happens it allows more flexibility in the interaction with the child which, in turn, allows for growth of the child as an individual. A parent will be more willing to work with the professional who shows sensitivity for the child. A positive attitude on the part of the professional will also give the parent a much needed lift on a down day.

2. Understand the Parent's View of Education

Educators need to understand the importance of education to the future of the child with autism. Parents have been told that the only "treatment" that has been effective with these children is a good school program. Parents are very demanding of the education system because it is "the only game in town," the only thing that will save the child from the institution.

At the same time parents will probably not believe all that the educator says. The child has been to numerous doctors, clinics and diagnostic centers and many people have had many differing ideas and opinions. Parents have learned to listen carefully, to be skeptical and to accept only what is consistent with their view of the child. This is especially true with regard to the older children. For example, the

teacher who has selected a new reading program may be disappointed when the parent is blasé about the whole thing. What the teacher doesn't realize is that this is the fifth reading program that has been tried during the child's school career and he still doesn't read.

3. Allow Parents to be Primary Decision Makers

Professionals must allow the parents to be the primary decision makers with regard to the child. In reference to the psychiatric community, Akerley has urged that options be presented to the parents and the choice then be theirs. She goes on to say, "And hard as it is to live with one's mistakes, it is infinitely more terrible to have to live with someone else's. Besides, the chances of their (the parents) making a less than optimal decision are probably no greater than yours if the options have been presented honestly." (Akerley, 1979b, p. 376). This is also true in education.

4. Allow the Parent to be Human

Parents will be in various stages of acceptance and coping in the professional's encounters with them. Parents should not be written off as "totally unrealistic" if they are denying the severity of the disability. They will still know the child better than anyone else ever will and their opinions and judgments will be essential in the process of working together. The feelings of denial, anger, guilt and depression are to be expected. It is important to allow the parent to be human and to have these feelings. Some situations may be uncomfortable, but the educator should try to remember what the parents are experiencing each day and allow them a little extra space.

5. Adopt a Non-Judgmental Attitude

Professionals should try to adopt a non-judgmental attitude that will allow parents the degree of involvement they can handle. They are managing in the only way that they can. It is important to resist the temptation to blame the parents if the child is not progressing and the parent will not carry out at home what is done at school. It is true that home-school consistency would be beneficial, but a parent who is working with the child out of guilt will not be effective. There is also a good chance that resentment and hostility will build up and damage the parent/professional relationship.

6. Engage in Mutual Learning

Professionals can be of great help to parents by encouraging them to learn about autism and by sharing information with them. It is also important for professionals to realize that they can learn from parents. There are an inordinate number of very knowledgeable parents who regularly go to conferences and read all that they can about this disorder. Parents will also often have the best record of the child. These parents should be used as a resource and as a sounding board for new ideas. This is a relatively new and rapidly changing field of education. Few educators--or parents--can keep up on all new developments so sharing of information is essential.

Another benefit to the exchange of information is the encouragement professionals and parents offer to each other during this process. The teacher sharing the child's latest accomplishment, or the parent reporting that a skill is carrying over at home, or the two of them brainstorming for a new idea to try, will help to stimulate interest and enthusiasm for both.

Occasionally there will be a parent who is well informed and abreast of latest developments in the field, as well as in tune to other parents' questions and needs. Rather than feel threatened by such a parent, the professional community should encourage the intelligent, articulate parent to speak for other less involved parents and to present the parental viewpoint at staffings and committee meetings. Such participation will increase the development of recommendations and procedures that are based on the reality of daily life for children with autism and their families. Such planning and resource functions should be valued, as are other consultations. Budgets should include reimbursements for per diems and/or expenses incurred for such consultations.

7. Consider Family Members as Distinct from the Child who has Autism

The focus of this discussion has been the effect of the child on the family, but the professional must not view everything in the context of the disabled child. A parent of a child with autism is not an "autistic parent." The myriad of interrelationships and interactions among husband and wife, parent and child, parent and child with autism, sib and sib, and sib and sib with autism must be considered separately. Certain stresses are the result of maturational processes that are not necessarily linked to the family member who has autism.

b. Advocacy for Individuals with Autism

The professionals can play a unique role in advocacy for individuals with autism and their families. In the school setting they can be involved in both informal and formal inservice for other staff. In the community, as they are involved in learning experiences with the students, they can help bus drivers, librarians, merchants and the staff at MacDonalds learn about autism and be comfortable with these children. It is the positive attitude professionals convey, as well as the information they share, that will prepare the community to accept the individual with autism who resides there.

The responsibilities listed here for professionals involve developing a sensitivity for the life the parent is leading. To increase this sensitivity it is recommended that professionals take a child home for the weekend. Experience first hand the sound of banging on the walls at 4:00 a.m., try making supper while also supervising a wandering child, or find activities to keep the child occupied for an entire Saturday and Sunday. And, when the child's leaving is anticipated with great joy, imagine having him stay for the rest of his life.

PARENTAL RESPONSIBILITIES IN THE RELATIONSHIP

It is not solely the professional's responsibility to be kind, courteous, understanding and brave when encountering parents in these various stages of grief and coping. A relationship, any relationship, will work only if both participants try to make it successful. The parent must also accept responsibility for the process of working together.

1. Maintain a Positive Attitude

Parents should put other less than positive interactions out of mind when beginning a new relationship. They should assume competence and a willingness to help the child. Sometimes this becomes difficult after many years of involvement with various systems and experiences with a number of reluctant service providers who know little about autism, but it is important for parents to anticipate the best.

2. Don't Blame one Professional for the Mistakes of Others

Parents should not dwell on past difficulties, or blame one professional for the mistakes of others. A consultant and parent were working to modify a program to make it more appropriate for the students with autism. After much sparring related to the dearth of services in the state, the consultant finally said, "If you will stop holding me personally responsible for every bad experience you have had with the system, I won't hold you responsible for the actions of every irate parent I have encountered." Each had been projecting past interactions into the present situation, and when those were finally put aside, the relationship became a positive one.

3. Engage in Mutual Learning

There must be a willingness on the part of parents to help the professional learn about the child with autism. Parents may not feel they should have to teach each new teacher about autism and about the child when certifications have been met. But often teacher training institutions have failed to prepare teachers for the broad range of individuality they will find in the classroom. If this is the first autism class in the building, the principal may not know much about this disability. Principals, as a rule are not given training in disabilities. Resentment on the part of the parent will not make these situations any better.

Sometimes the uninitiated professional will bring a new perspective to the situation and the parent can learn from him. When a teacher realizes that he won't be criticized for not knowing, he will be comfortable in asking questions, and will be more willing to use the parent as a resource. It is through this sharing of information that innovative ideas develop which may help the child.

4. Allow the Professional to be Human

It is extremely important that parents allow professionals to also be human. They will vary in their skill of working with the child. They

will have good days and bad days. They may become angry and depressed, as does the parent, and their personal lives may affect their work on some days.

The professional has only accepted to do a job. There is not a 24-hour-a-day commitment, it is only a part of their lives. Teachers will look forward to the end of the day and to vacations. It is normal and natural for them to do so. They are entitled to enjoy their time away from the child. There are some professionals who give much beyond the requirements of the job and they are really an inspiration to the parent, but the professional who does not give that something extra should not be blamed.

5. Set Limits for Intrusions

Many families face a dilemma in that they resent the intrusion of educators and other providers in their lives, but know that their involvement will be beneficial. It is the parents' responsibility to set limits for those intrusions. Very honest communication about the extent of the involvement of the provider is essential. If the school social worker is asking questions that are not related to the child, the parent should say so. If the latest behavior management program is impossible to carry out, the parent should make that known. They are the only ones who can judge if a request is unreasonable. Parents have a right to set these limits and should not feel that they are "bad" or uncaring parents because they will not do everything that the system expects. If the educator has adopted a non-judgmental attitude, they will not be viewed as "uncooperative." In any case, the parents' position will be clear and the open communication will be more productive than the build up of hostility and tension parents feel when put upon by the system.

6. Don't Hold the Education System Solely Responsible

It is important that parents not hold the education system solely responsible for lack of progress or regression in the child. Those situations are painful and it is natural to want to blame the agent who has the responsibility of helping the child. This may not be fair because there are too many variables. Not enough is known about the nature of the disorder to attribute any such change exclusively to poor programming. Placing blame will not help the child and may damage the parent/professional relationship. In the long run the child may be hurt if the educator becomes discouraged or hostile and unwilling to try.

7. Learn about the System

Parents also have a responsibility to learn about the various service systems. It is a time-consuming task to learn who is responsible for what, and parents don't have a lot of time (or energy) left after dealing with the immediate crises of each day to study the system. But it is important in the "working together" relationship to be able to sort out responsibilities and go to the appropriate person for action on an issue.

8. Learn Effective Advocacy

A final responsibility that parents have is to learn effective advocacy in educational and other service systems. This involves knowing the appropriate person to contact and approaching that person with a positive attitude. It involves resisting the urge to rage at someone. It may make the parent feel better, but it is generally not productive in the long run. It involves understanding that advocacy is a double-edged sword; a parent must learn how hard to push without hurting himself or the child. There will be times when the child needs so much more, yet pushing harder will only antagonize, so it becomes necessary to wait and try again another time. It involves convincing the provider, if at all possible, to do what is in the best interest of the child, rather than what is required by law. When Public Law 94-142 and Section 504 are used to win services through intimidation, those services may be eliminated if the laws are changed. Advocacy is a political process and often requires an assessment of political motives, including hidden agendas.

The parent will be involved with the child throughout his lifetime and must assume the responsibilities of primary case manager. If the child is to benefit from the various services available, the parent must know how to access the system effectively. Skillful advocacy can be learned, but some persons will learn it more easily and refine the skill to become more effective than others. Each parent must try but can also seek the help of other parents.

TWO MAJOR PREMISES

The responsibilities identified for professionals and for parents are really strategies for interaction to make the process of working together a productive one which will benefit the child. There are two major premises which underlie these strategies.

First is the need to put aside the roles each has been assigned and to view the other as a person. Sensitivity for what the parent is experiencing in a very demanding, stressful situation will benefit the relationship. While there may have been a choice to become a parent, there was no choice that the child would have autism. Understanding that the professional in education is an individual who has chosen a career will help explain the varying levels of interest and competence for doing the job. That choice may not involve a level of commitment that matches the parents' but is none the less a valid commitment.

Second is respect for mutual competencies. Both parent and professional have skills and experiences that they bring to the relationship. Each has a different perspective and it is a mutual respect for these views, and an open sharing of ideas, that will result in positive interactions.

Only by working together will the parent and professional accomplish their mutual goal--to enable the child to grow to be the best person he can be. Together they can give the individual with autism a positive self-image and the skills for self-fulfillment that will allow him to live his life with dignity.

REFERENCES

- Akerley, Mary S. The invulnerable parent. Journal of Autism and Childhood Schizophrenia, 1975a, 3, 275-276.
- Akerley, Mary S. Springing the tradition trap. Journal of Autism and Childhood Schizophrenia, 1975b, 4, 374, 376.
- DeMyer, Marian K. Parents and children in autism. Washington, D.C.: V. H. Winston and Sons, 1979.
- Hansen, Carol. The need for sharing. Journal of Autism and Childhood Schizophrenia, 1976, 2, 243.
- Moses, Kenneth. The mourning theory of family dynamics. Videotape presentation, n.d. .
- Stokes, Katharine S. Planning for the future of a severely handicapped autistic child. Journal of Autism and Childhood Schizophrenia, 1977, 3, 289.
- Sullivan, Ruth C. The burnout syndrome. Journal of Autism and Developmental Disorders, 1979, 1, 113-114.
- Torisky, Constance V. The hostage parent: A lifestyle or a challenge. Journal of Autism and Childhood Schizophrenia, 1976, 2, 236.